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NON-SPECIFIC INFECTIONS OF THE INTESTINES*

GEORGE H. THOMAS, M. D.,
Holland.

The purpose of this paper is to review briefly a number of apparently infectious diseases of the intestines of which as yet no specific microbe has been isolated, and about whose etiology there is a decided difference of opinion. These infections, or diseases, or, if you please, groups of symptoms, are not given the attention in medical research, or in medical schools, or even in our societies, to which their relative importance as a cause of death entitles them. They have no geographical limitations but are found in all parts of the United States, and do not differ materially in their relative importance, except as their virulence is favorably modified by climatic conditions on the Pacific coast.

It is said, "Statistics always prove that which the person using them desires to prove." I am reminded of the old lady, who showing signs of timidity at undertaking a sea voyage, was relieved of her fears by Mark Twain, who gravely informed her that more people died at home in bed than were drowned, proving to her that it was much safer to take the voyage than to remain at home. His statement was statistically correct. In the selection of localities from which to show the geographical importance of these infections I have tried to be unbiased, and have selected San Francisco city and county, New Orleans, New York, and our own state and county.

For the purpose of bringing the subject before you in a concise form for discussion, I will eliminate as specific infections, typhoid and typhus fever, tuberculosis, dysentery, cholera asiatica and nostros, and I shall also exclude hernia with strangulation, intussusception, volvulus, fistula in ano, appendicitis, paralysis, and peritonitis as mechanical or secondary in effect and will consider in the statistics of this paper only diarrhea, duodenitis jejunitis, ileo-colitis, colitis, proctitis, entero-colitis, gastro-enteritis and cholera infantum.

Among this large number of diseases there are distinctions without much difference, with the exception of cholera infantum and gastro-enteritis. In both of these conditions, the clinical findings are quite clear, but in all future reference to this group of diseases, I shall use the term diarrhea and enteritis as being more concise and quite as comprehensive. In the city and county of San Francisco for the fiscal year ending June 30, 1907, which

*Read before the Ottawa County Medical Society, Jan. 12, 1909.

was the year following the great earthquake, there were the following deaths and causes:

1. Organic heart disease 848
2. Tuberculosis of lungs 578
3. Lobar Pneumonia 492
4. Bright's disease 267
5. Broncho pneumonia 256
6. Apoplexy 239
7. Typhoid fever 229
8. Diarrhea and enteritis 225

From July 1, 1907, to November 1, 1908:

1. Organic heart disease 1009
2. Tuberculosis of lungs 907
3. Lobar Pneumonia 508
4. Bright's disease 441
5. Apoplexy 351
6. Diarrhea and enteritis 285
7. Broncho pneumonia ..... 2[illegible]3
8. Typhoid fever 135

In every instance of suspected typhoid both the Widal and Diazo reactions were used, and whenever possible a leucocyte count, before a positive diagnosis was made. Of the 225 deaths in 1907, 182 were under 5 years, and 42 over.

From this small number of deaths reported, one would be justified in stating that the infection or intoxication was not the result of impure water or food, or was very favorably modified by climatic conditions. In the city of New Orleans the leading causes of death were:

	1906	1907
1. Tuberculosis of lungs	871	968
2. Organic heart disease	734	759
3. Diarrhea and enteritis	547	590
4. Bright's disease	468	453

From 1880 to 1907, a period of 28 years, the following were the leading causes of death:

1. Tuberculosis of lungs .....2[illegible],394
2. Organic heart disease 14,634
3. Diarrhea and enteritis 14,595

Diarrhea and enteritis were only 39 less than organic heart disease.

In the city of New York in the year 1907, there were the following deaths:

1. Tuberculosis of lungs 9099
2. Organic heart disease 7237
3. Bright's disease 6684
4. Diarrhea and enteritis (under 5 years)..6610
5. Lobar pneumonia 6217
6. Broncho pneumonia .....5[illegible]90

Comparing the deaths from typhoid fever with diarrhea and enteritis for the same quarter of the year 1907, we find no similarity of cause.

	Diarrhea and Enteritis (Under 5 years)	Typhoid Fever
1st quarter	551	124
2nd quarter	705	155
3rd quarter	4456	198
4th quarter	898	263

During July, August and September there were 4456 deaths, which tends to show climatic influences as the predisposing cause.

In July, August and September of 1908 there were 3829 deaths under 5 years from diarrhea and enteritis, or more than from tuberculosis of lungs, organic heart disease and pneumonia combined.

The vital statistics of Michigan for 1907 are not compiled, but in 1906 the leading causes of death were:

1. Organic heart disease 3526
2. Diarrhea and enteritis 3125
3. Tuberculosis of lungs 2303
4. Lobar pneumonia 2081

To show the climatic influences affecting diarrhea and enteritis and to compare it with typhoid fever, I will give you the death rate per 100,000:

1. Counties of Upper Peninsula—
   Diarrhea and enteritis, under 2 years, 156.4; over 2 years, 19.8.
   Typhoid fever, 25.1.
2. Northern Counties, Lower Peninsula—
   Diarrhea and enteritis, under 2 years, 113.8; over 2 years, 35.0.
   Typhoid fever, 32.6.

3. Central Counties, Lower Peninsula—
   Diarrhea and enteritis, under 2 years, 91.6; over 2 years, 21.9.
   Typhoid fever, 34.6.

4. Southern Counties—
   Diarrhea and enteritis, under 2 years, 80.2; over 2 years, 26.3.
   Typhoid fever, 25.7.

In Ottawa county the leading causes of death were:

1.	Diarrhea and enteritis	54
2.	Organic heart disease	42
3.	Tuberculosis of lungs	33
4.	Apoplexy	31
5.	Lobar pneumonia	26

In the same year there were 5 deaths from scarlet fever. Do you remember how the physicians of this city were called by the chief of police to meet in this room in solemn conclave with the Board of Public Health, in regard to an epidemic of scarlet fever consisting of 9 cases in a city of 10,000 and I believe 2 deaths? The people were terror stricken. The schools were closed and nervous women were on the verge of prostration as a result of the agitation. Our force of teachers was demoralized.

During 1906 there were 5 deaths from scarlet fever, while 54 people, mostly children, died as a result of diarrhea and enteritis, and nothing was thought or heard of it because it is unfortunately not our popular disease. The combined deaths from contagious diseases and tuberculosis were 53 or 1 less than from diarrhea and enteritis.

In Allegan county diarrhea and enteritis was fourth as a cause of death, and the number of deaths from this source was more than double that from contagious diseases. In all the statistics given, diarrhea and enteritis was the direct cause of death, and no consideration has been given the great number of contagious and infectious diseases in which this complication was an important contributing cause.

I trust you will pardon me for the time consumed in dry statistics, but in no other way can I emphasize the tremendous importance of non-specific diseases of the intestines as a cause of death. As I have stated, there is, and can be, a decided difference of opinion in regard to the etiology of this group, but the obscurity which has surrounded them for so long has been partially cleared away through the researches of such men as Bouchard, Finkelstein, Combe, Charrin, Vaughan, and Novy.

However different the terms used to denote the findings or theories of these men, one cannot but be impressed with the fact that again there is a distinction without much difference, as in the minute subdivision of enteritis into its theoretical parts.

In using the word infection in the title of this paper, I am fully aware that a large number are ready to disagree with me, and to insist upon the use of the many terms used by our best writers as more accurate and less misleading.

I am using this term only in its broadest sense, namely, to convey the idea that all of this group of diseases are caused either directly or indirectly by bacteria.

Analyzing the different terms used to designate the etiology of these diseases, we find that statement to be substantially correct. Toxin, a bacterial poison, whose chemical nature is uncertain; toxalbumin, an albuminous substance formed by bacteria; autointoxication, the absorption of bacterial poisons or products of disordered metabolism of the patient's own cells; autoinfection, disease caused by bacteria derived from the individual's own body; ptomaine, an organic chemical compound, basic in character, formed by the action of bacteria on nitrogenous matter; leucomaine, a basic substance which results from tissue metabolism in the body. All of these conditions except two are dependent on bacteria for their origin. Autointoxication may be the result of

absorption of disordered metabolism or bacterial poisons, and leucomaines result from tissue metabolism but have we any proof that the disordered metabolism is not also the result of bacterial irritation, especially in the intestine?

The digestive tract is admirably fitted to combat infection, but at the same time is a constant source of infection. The antitoxic system of the intestine consists of internal factors which limit putrefaction, such as absorption; the greater the concentration and the less liquid, the greater the absorption and the less residue for putrefaction. The acidity of the gastric juice destroys some bacteria and inhibits their growth. The biliary acids, especially tauro-cholic acid as shown by Linderbergen, have an important antitoxic action. The pancreatic juice according to Charrin neutralizes a large number of toxins.

The acid reaction of the small intestine due to microbic fermentation of sugar, cellulose, fats, and carbo-hydrates, protects the albumen derivatives from the proteolytic anaerobic bacteria.

This acid reaction is maintained in spite of the alkalinity of the intestinal juice (MacFayden) by the aerobic and anaerobic facultative bacteria, bacillus coli and lactus aerogenes. Thus the proteolytic anaerobic bacteria, which exist only in an alkaline medium, are kept in subjection.

In the normal colon, we find aerobic bacteria or facultative anaerobics, but in enteritis, the anaerobics, proteus putrificans and mesentericus are present, and the aerobics colon and lactus aerogenes disappear. (Bienstock.) The intestinal mucosa prevents the invasion of poisons by its secretion and the action of its cells.

Charrin has shown that the diastases act on the protoplasm, alter the microbes, and adulterate the microbic secretions, also owing to a lack of oxygen, the bacterial excretions like phenol and ammonia restrain their multiplications.

The mucus acts both mechanically and chemically. The leucocytes act on the soluble elements, and in infancy leucocytosis is more marked at the moment of digestion, which is a favorable time for the passage of soluble toxic substances into the capillaries. Delamarre has noted an insufficiency of mucin, diastasic compounds, and muscular fibers in the ileum during infancy, which shows why there is a predisposition to disease during that period. The cells of the mucosa exercise an antitoxic and protective function. In 1887 Charrin showed that toxins lost their toxicity in whole or in part, when introduced into the body through the digestive tract. Fifty times the dose of filtered bacterial cultures that is fatal when injected into the circulation, if administered by mouth shows no appreciable disorder.

If, however, there be a lowered vitality of these cells as a result of physical or chemical irritation, the dose will be rapidly fatal.

Should any toxic substance pass through the mucosa and enter the portal vein, the liver cells withdraw it; and it is estimated the liver destroys two-thirds of the poisons of digestive origin, and acts as a protection against gastro-intestinal autointoxication. (Bisso.)

Thus, briefly, I have outlined the natural protective and antitoxic character of the intestinal tract and have tried to show how this wall of defense is constantly menaced by bacteria whose normal habitat is the intestine, and by invasion from without of pathogenic and non-pathogenic bacteria.

Among the primary causes which tend to disturb this system of defense are the following:

1. Increase in toxic substances in the intestine through fermentative changes as a result of errors in diet. All forms of these are primary causes. Artificial feeding of infants in hot weather, over or under feeding, milk from a nurse, whose psychic state is abnormal, that is irritable

or nervous, or whose physical condition is bad as a result of drink, poverty, menstruation, or pregnancy. Milk coming from cows fed on green fodder, oil cakes, or by-products of distilleries and vinegar plants, contains toxic acids. In the adult any diet which increases nitrogenous putrefaction, either before or after entering the intestine and furnishes the intestinal bouillon culture in which the proteolytic intestinal microbes live.

2. Sudden changes in temperature, "a sudden fall in the temperature in fall or spring causes a severe catarrhal diarrhea; how we do not know." (Osler.)

3. Changes in the intestinal secretion in which its alkalinity is increased. (MacFayden.)

4. Nervous influences.

Among secondary causes may be mentioned the infectious diseases, especially tuberculosis and pneumonia, hepatic insufficiency, inflammatory extension from surrounding organs, anemia, glandular diseases and Bright's disease.

The symptoms are too well known to need mention. The treatment is of necessity dietetic, disinfectant, and antiseptic, and I do not intend to go into this in detail, but cannot refrain from speaking of the tendency of our test tube specialists to belittle or discard all intestinal antiseptics as wholly inactive in the medicinal doses given. They point to the time required and the antiseptic necessary to effect antisepsis in a test tube culture. The comparison is so absurd that I wonder at the eagerness with which such statements are accepted without investigation by so many practitioners. As I have stated, the gastrointestinal tract is of itself antiseptic and antitoxic, and although it is the normal habitat of countless micro-organisms, both pathogenic and non-pathogenic, yet we have no infection. It is only when this natural wall of defense is broken down by alterations in the intestinal juices or putrefactive changes in the intestinal contents, or when we have a lowered resistance of the cells of the mucosa, as a result of nervous depression, or irritants, either physical or chemical, that infection is possible.

To cure such infection it is only necessary that we first eliminate the offending material and regulate the diet so as not to furnish a suitable media for further bacterial growth.

It is only when this has been accomplished that antiseptics and disinfectants are indicated, and the highest of European investigators support me in the statement that intestinal antiseptics lessen putrefactive changes, diminish the vitality of the bacteria, and cause indol to disappear from the urine and stools.

First in the list of antiseptics I name: (a) calomel, then (b) ichthoform, (c) salacetol and (d) bismuth salicylate, although many others may be used to advantage.

In conclusion, I hope this subject of non-specific infections of the intestines will receive the consideration from the medical profession of this country which its importance as a cause of death entitles it to receive.

a. Morax, Hoppe, Seyler, Lavarsky.
b. Anfreoht, Rabow, Schefer, Polacco.
c. Combe, Bauman.
d. Vulpian, Riegner.

CAUSES OF OBSCURE FEVERS IN CHILDREN*

I. L. POLOZKER, M. D.,
Detroit.

We have been taught in the past that fever in children does not mean anything; their nervous system is so unstable that they are apt to have high temperatures from slight causes. This teaching is a step forward upon the teaching of our fathers who used to think of a fever as a disease *per se* and not a symptom of a disturbance that has a definite cause back of it. If physicians in general practise would spend more time and be more thorough in the examination of their little patients, they would, as some specialists, almost always be rewarded by the finding of the true cause of the fever in the child. The supposition that an infant or child is teething or has eaten something that does not agree with it, being the cause of his sickness is not taken so readily by the skilful physician. He is not satisfied with the suggestion of the family that this or that is the matter with the child. A little calomel or aconite does not come in in the treatment of fever, but he uses every means in the examination of the child as he does in an adult; and still it is surprising how often in consultation a man meets with such cases where no attempt has been made by the attending physician to examine the urine, blood or sputum of the child, and yet such examinations alone, very often, reveal the diagnosis. When such a suggestion is made to the attending physician, he often wonders and asks how to obtain such samples for examination. Now it is very easy to obtain a specimen of urine. In boys any wide-mouthed bottle or a little jar or rubber bag put around the genitals, kept in place by a diaper, especially quite a while after urination and before the next micturation is expected, is sufficient. In girls, a pad of sterile cotton or sponge over the vulva will collect enough for examination. Chapin, of New York, has invented a very suitable infant urinal for such purposes. In very rare cases, if necessary, we may resort to the catheter.

The sputum is hard to obtain in young children. A smear from the throat after coughing is sufficient. Findlay, of Glasgow, advises to take a piece of gauze around one's finger, irritate the pharynx or epiglottis, inducing coughing, and the expectoration that is coughed up is swept out by the mouth before the child can swallow it, which is usually enough for bacteriological examinations. Of course blood is obtained in the same way as it is in adults.

How many cases are diagnosed as malaria or typhoid and no attempt made at a blood analysis? And often when such analysis is made those things can be excluded. Urinary examinations are seldom made in children and if made at all, are confined to chemical examinations only, while microscopical examinations will reveal a great deal.

It is true that often we will meet with a little patient in whom repeated examinations will fail to account for a continuous rise of temperature and after close and careful study of the case, one will fail to find the cause. In such a case, one can at least be satisfied that there cannot be any very serious condition existing.

S. L., age 4½ years, seen by me with the following history:—Perfectly well up to six months previous, when mother was first introduced by her

*Read before the First Councilor District Society. April 22, 1909.

family physician to a clinical thermometer, and advised to take the child's temperature occasionally. One day she summoned the physician. The child was vomiting, appeared very restless and had a temperature of 100.5 degrees F. After treating the child for what he thought was probably some dietary indiscretion the child appeared better but the fever continued. Diagnoses of malaria, rheumatism and tuberculosis were made from time to time and discarded. I was called in when the child had a temperature continuously for six months, maximum 101° F.; minimum 99.5° F., by rectum. Examination of the chest, abdomen, nose, throat and ears negative; blood, sputum and repeated urinary examinations negative. Calmette reaction negative. Going carefully into the previous history mother could recollect that the child was frightened on the first day she became sick. The child appeared anxious about herself. She was watching the doctor and myself and seemed to understand that she was the center of the stage and a mystery to us. Gaining the child's and the mother's confidence, I advised the mother not to take the little one's temperature any more. I saw her at my office several times but would not examine her closely; only talked to her and practically played with her.

To my surprise, in two weeks after discarding all treatment, and also the thermometer, and diverting the child's mind from herself by cutting out pictures and systematic playing, the child's temperature was normal and stayed normal the last year with the exception of a few days during an attack of influenza.

Undoubtedly our experience teaches us that the nervous system plays a great part in keeping up a rise of temperature in children the same as in adults. All they need is a starting point and then the anxiety on the part of the family and the physician will cause such conditions to persist. Emotional disturbances, hysteria, will be the cause of fever in older children. I have often known disappointments in school, play, dress, presents and parties, etc., to be responsible for attacks of fever. But we must be very careful and very positive that we have no organic or other functional causes before we attribute it to such conditions as enumerated. Overwork in school or over-exertion such as continuous, strenuous playing is responsible for fever in children. Lack of fresh air and over-feeding very often result in continuous fever in children with definite findings.

Agnes E., aged 3 years, would get periodical spells of rise in temperature from 101 to 102 degrees F. lasting several days, during which the child would appear well, seemingly unaffeced by the fever. Examinations would reveal nothing and all attempts at diagnosis proved fruitless. I gave it up in despair, until one day the nurse-girl took sick and left the family. The child got well. The same nurse-girl applied to me soon after, asking if I could not recommend her. I said, "I would because you were so good to Agnes. Agnes does not look so good and plump as she did when you had her." "No wonder," said the girl. "Her mother is starving her, living up to certain rules. I don't believe in feeding a baby by rules. You know baby had a pint of 20% cream every day when I took care of her." Of course the child did not get that cream since and undoubtedly her condition was due to fat over-feeding.

Diseases of the gastro-enteric tract in young children, chronic intestinal toxemias or any metabolic disturbances in older children, chronic duodenal indigestion with jaundice, clay-stools, attacks of vomiting, pain, are causes of prolonged fevers in children. Following such attacks we very often have infection of the kidneys, but the colon or the different forms of intestinal bacilli and the true condition is only found by the examination of the urine. When a pyelitis follows intestinal infection or any of the infectious diseases, we have an irregular temperature, perhaps very high or very low in the same 24 hours; it may be high in the morning and low in the evening, and may have intermissions of normal temperature. When following digestive disturbances, the feces are full of shreds of membrane, and there is anorexia. In primary pyelitis we have fever intermittent in character, emaciation, constipation, pain on urination and bed-wetting (which may be the first symptom), passing very little urine at one time. But we may have

a pyelitis in a child primary without any symptoms. And even the urine, at times, may be free from pus. Sample of the morning urine may be normal, but later in the day pus may be present. An examination of the blood will show a leucocytosis.

Baby L., aged 11 months, taken sick; chill; temperature 105° F.; cough. Examination of the lungs first negative; examination 3 days later, dullness in right apex and later at the base of the same lung. After crisis he got well; temperature normal for 3 days. Saw him again on the fourth day at 8 a. m.; temperature 102° F.; at 12 noon same day, temperature 99° F.; at 5 o'clock p. m., temperature 104° F. and at 10 o'clock p. m., temperature 100° F. This condition persisted the next day. Examination of chest negative; examination of ears (by Dr. Eugene Smith, of Detroit) negative; examination of blood by Detroit Clinical Laboratory, increased leucocyte-count. Examination of urine,-albumen, pus cells, a few hyaline and granular casts. Diagnosis of pyelitis made. Child died a week later.

In primary or secondary pyelitis, in examining the urine we always have acid urine, albumin, pus, and a few casts. We must also think of chronic albuminurias in children and the persistent nephritis that follows scarlet fever. We differentiate a nephritis, acute or sub-acute, from a pyelitis, by fewer casts in the latter and wider irregularity in temperature, which may be a range of 3 or 4 degrees in 24 hours. In secondary pyelitis the colon bacillus is almost always found. We may have an afebrile condition where the differential diagnosis will have to depend entirely on the examination of the urine and blood. Pyelitis occurs more often in female infants, and truly when one watches a nurse or mother changing a baby's soiled napkin, he is surprised at not having any more infection of the urinary tract.

Diseases of the tonsils and adenoids are often the cause of continued fevers in children, but, of course, the diagnosis is obvious and the treatment is at hand. And after the removal of the same, the temperature should stay down. But often when such chronic inflammations have extended to the mucous membrane of the mouth, pharynx and larynx, and have infected the cervical glands, such infections will harbor germs causing an indefinite run of fever. Streptococcic infections of the tonsils or any portion of throat is very often the source of a continual fever. It is true that the temperature is usually very high, but it also may be continuous and low. Caries of the teeth, uncleanliness of the mouth, and the different forms of stomatitis will often be responsible for an irregular temperature. Infections of the nose, with their nasal secretions and very often with true Klebs-Loeffler Bacillus (nasal diphtheria —diphtheria carrier), also infections of the antrum, are causes of irregular rises of temperature in children, as well as in adults. Tubercular lymphnodes, chronic diffuse tuberculosis, miliary tuberculosis in children are often not easy to diagnose, and these have a fever as their first symptom. Calmette eye-reaction, Von Pirquet's vaccine reaction, sputum examination, and repeated physical examinations should be made. There has been a great deal written lately against the eye-test and reports of serious results. But it will be interesting to refer you to Dr. Holt's article on tubercular tests in young children in *Archives of Pediatrics*, January, 1909, page 1. He reports no unpleasant results from the eye-test and he does not claim, as other observers do, the reliability of the skin-test over the eye-test. He says: "There is not much to choose between the two (Pirquet and the eye-tests), very seldom do good authors make use of the subcutaneous injection of tuberculin in children." A history of exposure, or living with tubercular people, is very valuable, as the little ones are so often kissed and played with until they become infected.

On the prephysical signs of tuberculosis in children, W. C. Hollopeter in an article in the *Journal of the American Medical*

Association, November 21, 1908, makes the following remarks: "The mediastinum is more frequently involved than it is supposed. It is likely to follow any of the eruptive diseases where the superficial lymph nodes are involved. We then get dullness over the first bone of the sternum, signs of pressure on the veins, paroxysmal cough, and they all point to caseation of the bronchial glands. Signs of pressure do not occur until the glandular swelling is considerable. A diagnosis before pressure symptoms develop is not easy. Hollopeter in his article suggests the following, which I have often found in early cases. If the child is made to bend the head back so that the face becomes horizontal and the eyes look up to the ceiling above, a venous hum is heard over the upper bone of the sternum varying in intensity according to the size and position of the diseased glands. This hum diminishes as the head is brought forward and ceases altogether when the head is in the normal position.

Nagel in *Jahrbuch Kinderheilkunde,* 108, No. 4, says that enlarged bronchial and mediastinal glands are recognized by flattened percussion sound over the fifth and sixth spinous processes of the spinal column.

Inflammations of the middle ear are very often the cause of a long irregular temperature and have fooled a good many clinicians; and sometimes, not until the ear has commenced to discharge has the true condition been recognized. When a child has a cough, an ordinary coryza, followed by an irregular slight redness of the throat, rise of temperature, becomes cross and fretful, cries easily, examine the ears. A speculum examination will reveal a redness of the drum and a slight bulging of the middle ear. An early incision in such cases will often cut short the illness and prevent more serious involvement. We meet with those conditions in the early spring and fall of the year, usually following an influenza or any of the infectious diseases in childhood, but very often only an ordinary coryza. And in a routine examination of the ears you will not miss it. It is true that nature often makes the diagnosis and applies the treatment; but it is for us to give freer drainage and aid nature.

Another common cause for continuous fevers in children is the rheumatic affection with the endocardial and pericardial complications and chorea. The slight recurrent attacks without any heart involvement are the cases that carry a continual irregular temperature and will go on unrecognized until followed by complications. The man who does not see very many children with rheumatism expects to see in a child always the same picture that he sees in an adult and he is disappointed and often passes the pains as growing pains or due to excessive playing or exercise.

Different forms of eczemas, congenital syphilis, seborrhea of the scalp, associated with their glandular swellings, are responsible for fevers in children.

In diseases of the new-born, which are numerous, and almost always due to infections at birth, very little attention is paid to the rise of temperature, and the infection is not recognized until some pathological symptoms, like jaundice, pemphigus or other eruptions develop.

In conclusion I would say that if the physician would bear all this in mind when he sees his little patient, who cannot complain to him, but would make a thorough examination of the patient, and not be satisfied because something suggests itself at first sight to be responsible for the condition, he would attain many better results. He should examine and treat the patient; not only the disease.

Everyone meets often in consultation with cases where the patient is drugged, treated for everything, given cod liver oil, iron and other things that the physician thinks he needs, but the system would not stand for when a little fresh air, easily digested and assimilated food will get the system toned up and the patient well.

THE MODERN TREATMENT OF DIFFUSE SUPPURATIVE PERITONITIS*

FRANK CAMERON KINSEY, A.M., M.D.,
Three Rivers.

Of all the family of Medical Bugaboos, none has been so generally feared by the practicing physician as the old gray-headed father of nightmares—Diffuse Suppurative Peritonitis. Is there any one of us who cannot raise a ghost from the past—a phantom with anxious, drawn, lead-colored face, constantly vomiting; with knees drawn up over its swollen and motionless abdomen? We can raise this ghost, but can we lay it? I think we can.

In presenting the treatment of a condition in which there has been such a frightful mortality in the past, I shall not put forth any methods or theories of my own, but shall present for comparison the treatment used at the present time by the surgeons who are the most successful in its relief. In gathering materials for this paper, letters were sent to a number of the leading surgeons of this country asking them the following questions:

1. Do you *always* operate in diffuse suppurative peritonitis? What conditions (if any) do you consider contra-indications to operation?
2. On how many cases have you operated and with what mortality?
3. What is your method of operation and treatment?
4. Do you employ the Fowler position?
5. Do you or do you not flush out the abdominal cavity after operation?
6. Do you employ the Murphy method of rectal instillation?
7. Do you have favorable results from the use of antistreptococcic serum?
8. Do you endorse Morris' "treatment by scientific neglect" as outlined at the June meeting of the American Medical Association?

These questions were answered by twenty surgeons. In looking over their replies, one is impressed with the remarkable difference of opinion still existing among surgeons as to the best treatment in this condition.

Byron Robinson of Chicago takes a rather pessimistic view of operative interference. He writes: "After twenty years labor in the peritoneum, I am unable to answer categorically your questions on Diffuse Suppurative Peritonitis. First—I am inclined to think in last resort cases that more would live without operation. I think that, if we operate, the peritoneum should be flushed out with salt solution and then to (a) close the peritoneum and administer opiates or (b) drain extensively and employ continuous proctoclysis, eight ounces per hour. Proctoclysis is a distinct addition in the cure of peritonitis. Postural therapeutics possess limited utility. In general, I think more would recover without operation with use of opium."

Daniel N. Eisendrath, of Chicago, has a number of contra-indications to operation. He answers my questions as follows:

"No. 1. No; I do not operate after the third day in adults, nor after the second day in children if symptoms of sepsis are very marked, such as a very rapid pulse above 150, of poor quality, greatly dis-

*Read at the meeting of the Third Councilor District Medical Society, Battle Creek, Oct. 6, 1908.

tended abdomen with almost continuous vomiting, etc. I believe such cases are much better served by elevating the head of the bed, sitting them up, giving them continuous saline per rectum and absolutely starving them. These advanced cases rapidly collapse after the abdomen is opened and the surgeon is blamed for the death, even though in many cases the relatives and attending physicians have all agreed that there is not one chance in a thousand.

"No. 2. I have operated on fourteen cases and have only lost two.

"Nos. 3, 4, 5 and 6. My method of operation is to open the abdomen through a modified Battle incision, get out the appendix as rapidly as possible, simply ligating it at its base; inserting either a Mikulicz gauze drain, which I regard as one of the best, or a split rubber tube containing a strip of gauze. The abdomen is then rapidly closed, the entire time of the operation not consuming more than fifteen minutes. No effort is made at irrigation. I use the Fowler position when the patient is very weak and then I simply elevate the head of the bed to an angle of 45 degrees. I use the Murphy drop method of rectal instillation as soon as the patient is brought to the bed. I have never had any favorable results in the use of antistreptococcic serum, and I have absolutely no confidence in the Morris treatment by scientific neglect, except in the very advanced cases in answer to your question No. 1."

Eisendrath evidently misunderstood Morris' treatment by scientific neglect, as his own method tallies very closely with the treatment Morris recommends (1), namely, simply tying off the stump and getting out as fast as possible, without irrigation or handling, leaving Nature to make the toilet of the abdomen.

J. H. Carstens, of Detroit, writes that he has no rule of operation; that it depends upon the organ from which the infection starts and the kind of microbe. He has not tabulated his cases. He says he removes the diseased parts, and as a rule, drains. He sometimes uses the Fowler position, and generally does not flush the abdominal cavity after operation. He employs Murphy's rectal instillations; reports very decidedly favorable results in some cases from the use of antistreptococcic serum, and endorses Morris' treatment by scientific neglect. In concluding he writes: "All around I might say that no definite rule can be laid down. Every case must be judged by itself and treatment based on experience."

John A. Wyeth, of New York City, answered as follows: "In the treatment of widespread infection of the peritoneal cavity, the immediate indication is to remove the focus of infection, together with all septic exudate which may be encountered. If the location of the original point of infection be satisfactorily established, the incision through the abdominal wall should be made so as to permit free access to this location." Here follows reference to the method of removing gas and semi-liquid ingesta from the hyper-distended intestines. "In cleansing the general peritoneal cavity, the abdominal irrigator devised by Prof. Joseph A. Blake will be found most satisfactory." "In further answer to your query No. 1, there are no contra-indications to operation except a moribund condition of the patient. No. 2—I cannot give you the number of my cases with ratio of mortality. No. 3—Already answered." No. 4—He advises the use of the extreme Fowler position. No. 5—"Prefer to flush locally and rapidly with Blake's apparatus, and not flush the general peritoneal cavity." No. 6 (as to the use of Murphy's rectal instillation)—"Yes, I consider it exceedingly valuable." No. 7—Have not used antistreptococcic serum."

W. J. and C. H. Mayo, of Rochester, Minn., answered my questions through their assistant, E. S. Judd, as follows: "No. 1. We do not always operate at once for suppurative peritonitis. Contra-indications are: lowered resistance, shown

by blood count; extreme shock; and when the patient is walling off a condition that at one time seemed diffuse. No. 2—We have operated upon many hundred cases of this kind; several hundred each year. The mortality recently is about 3 per cent. No. 3—The method of treatment depends upon whether the condition is acute or more or less chronic. No. 4—We use the exaggerated Fowler position. No. 5—We do not flush out the abdominal cavity after operation. No. 6—We use the Murphy drop method of rectal instillation. No. 7—Our results from the use of antistreptococcic serum did not warrant the continuation of its use."

Thos. B. Noble, of Indianapolis, writes that he always operates except on patients *"in articulo mortis."* He uses local anesthesia whenever possible for incision, "to increase the rapidity of work." He does no unnecessary manipulation. He employs the Fowler position universally, "even though the heart be weak with pulse of 120 or 140." He never flushes the peritoneal cavity, but employs proctoclysis and intra-venous injections in severe cases. His results from the use of antistreptococcic serum are favorable in 50 per cent of puerperal cases and unfavorable in all others. He endorses Morris' treatment by scientific neglect.

Albert J. Ochsner, of Chicago, wrote such an interesting letter that I shall give space to most of it. He says: "My mortality at the present time in beginning diffuse suppurative peritonitis due to appendicitis is a little less than 2 per cent, and this mortality is confined entirely to patients who have received either food or cathartics, or both, after the beginning of the attack of appendicitis. Question 1—I always operate in suppurative peritonitis, but usually first place the patient in the Fowler position, wash out the stomach, place him on exclusive rectal feeding and upon Murphy's drop method until the pus becomes circumscribed in the lower portion of the abdomen. Question No. 2—I do not know the exact number of patients suffering from diffuse peritonitis I have operated because I have not kept a record of all cases. It is somewhat difficult to answer this question because of the difference in classification. At the Augustana Hospital, where I have records of all cases, I have operated 112 with 78 recoveries and 44 deaths. This, however, includes only the advanced desperate cases of diffuse peritonitis which came under treatment three days or longer after the beginning of the attack. My Augustana records show 1,084 cases of diffuse peritonitis with 76 deaths. Of these, 112 (mentioned above) were advanced, with 44 deaths, and 972 simple diffuse peritonitis not so advanced, with 32 deaths. Question 3—I simply make an incision, remove the perforated appendix or close the perforation in the perforated intestine or stomach, and insert glass and cigaret drain. In case it is difficult to remove the appendix, I leave this in place until later. Questions 4 and 5—I use the Fowler position. I never flush the abdominal cavity, although I did this with murderous results in a number of cases some years ago. Questions 6 and 7—I use the Murphy drop method constantly. I have had no favorable results from antistreptococcic serum. Question 8—The method referred to as "scientific neglect" has reduced my mortality from 16 per cent to 2 per cent when combined with gastric lavage, Fowler position, Murphy's drop method and exclusive rectal feeding, in all cases of perforative or gangrenous appendicitis with beginning diffuse peritonitis."

W. P. Manton, of Detroit, writes that he always operates if the general condition of the patient is such as to admit of operation. He cannot give the number of his operations or the mortality. In operating he simply opens the abdominal cavity and drains. He employs the Fowler position and "sometimes but not always" flushes the abdominal cavity. He has never used proctoclysis nor antistreptococcic serum, and does not endorse

Morris' treatment by scientific neglect.

Robert T. Morris, of New York, writes a characteristic letter: Answering your questions *seriatim:* 1. I make it a rule to operate in cases of suppurative peritonitis, and do not remember ever having done otherwise excepting in one case of appendicitis with pregnancy, some years ago. 2. It would be impossible to get cases tabulated for report now, as they amount to several hundred, in various hospitals and in private practice. My mortality rate for some years has been practically nothing, but a series of fatal cases may occur in the future. 3. Quick operating, small incision, no packing, one small wick drain. 4. I use the modified Fowler position, but not complete; too much work for the heart. 5. Abdominal cavity not flushed or even wiped after operation. Get in and out quickly, and let the capillary drain and atmospheric pressure do the rest. 6. Murphy's drop method of rectal instillation is of immense value; used it before Murphy described it. 7. Antistreptococcic serum is not on a scientific basis as yet; too many kinds of bacteria to reckon with. 8. Scientific neglect saves my patients. Hope it will save yours. It will not take long to find out."

Van Buren Knott of Sioux City writes that as early as 1902 he read a paper before the Western Surgical Society advocating the use of large soft rubber drainage tubes introduced at the most dependent point of the pelvis, combined with postural treatment in the exaggerated Fowler position. Answering my questions, he said: "No. 1. I operate in every case of suppurative peritonitis unless it is clearly evident that the patient is dying and will live only a few hours with or without operation. No. 2. I have operated upon 76 cases of this character with 5 deaths. No. 3. Through a convenient and ample incision, expose the source of infection and close same by accepted method. Pass hand rapidly to bottom of pelvis separating any adhesions which may shut off the cul-de-sac or recto-vesical pouch from the rest of the peritoneal cavity. Insert a large soft rubber drainage tube one inch in diameter, split from end to end and carrying a loosely fitting wick of iodoform gauze into the lowest depths of the peritoneal pouch, and close the wound down to the tube. This tube is permitted to remain in place from seven to ten days." Nos. 4, 5, 6, 7, and 8. He employs the Fowler position, does not flush the abdominal cavity at the present time, although formerly he did so, employs rectal instillation, does not use antistreptococcic serum and does not endorse treatment by scientific neglect.

J. H. Kellogg of Battle Creek wrote: "1. I operate in suppurative peritonitis when I think the patient has even a small chance for recovery, using laughing gas with oxygen in severe cases. When the patient is moribund of course I refuse to operate. No. 2. From my recollection I think I have operated upon 12 cases, 2 of whom died. No. 3. My method of operation is free incision, free drainage, using both capillary drains and iodoform or iodin gauze." Answering queries 4 and 5, he does not employ the Fowler position and does not flush the abdominal cavity after operation. "No. 6. I have for many years used frequent enemas. I have also used rectal flushing by continuous irrigation. I think it an effective measure. No. 7. I have had good results from antistreptococcic serum in chronic conditions, but have not had an opportunity to try it in acute suppurative peritonitis."

John Young Brown of St. Louis always operates unless the patient is moribund. He writes that he has operated upon 32 cases of "Diffuse General Peritonitis" with a mortality of 5%. He removes the appendix rapidly and drains. He employs the Fowler position, does not flush the abdominal cavity after operation, uses Murphy's rectal instillation, thinks antistreptococcic serum of little value, and endorses Morris' treatment by scientific

neglect "in a measure."

Parker Syms of New York writes: "1. I do always operate in diffuse suppurative peritonitis. At Lebanon, I think that we declined to operate on but one patient, he being moribund. No. 2. I am sorry that I cannot give you the number of cases operated upon, nor the mortality rate. It has, however, been remarkably small. No. 3. My method of operation and treatment is to make a sufficiently large incision; to remove the appendix, using simple ligature. I pack so as to avoid intestinal obstruction and drain the site of the original abscess." He uses the Fowler position, does not flush the abdominal cavity, uses Murphy's rectal instillations, has not had successful results with antistreptococcic serum, and says he can only partially agree with the views of Dr. Morris. He says, "I operate on every case of appendicitis, no matter what period of the disease. I am a strong antagonist to the teachings of Ochsner in this particular. Our results have been so good that we have never thought of changing to any very different plan of treatment. We practically never lose a case of localized peritonitis or abcess. We believe that our good results are due to the care we take in protecting the healthy and uninvaded peritoneum."

De Forest Willard of Philadelphia, always operates except in moribund conditions. He has not complete records of cases with mortality. His method is "early and speedy operation; very free drainage." He employs the Fowler position and flushes the peritoneal cavity, but "not invariably." He uses Murphy's rectal instillations, says he is "not positive" as to the benefit of antistreptococcic serum and does not endorse Morris' treatment by scientific neglect.

Thomas B., and Joseph R. Eastman of Indianapolis always operate unless the patient is actually moribund. They have operated upon 53 cases with a mortality of 14 per cent. They employ free irrigation except when adhesions are too dense, and use a large soft rubber drain in the cul-de-sac, reinforced by gauze. They use the Fowler position, and flush out the abdominal cavity, although formerly they did not. They do not use rectal instillations: simply copious and repeated enteroclysis, and do not employ antistreptococcic serum neither do they endorse Morris' treatment by scientific neglect.

R. C. Coffey of Portland, Oregon, always operates except in hopeless cases. He says he has operated on "Probably 20. Have not statistics at hand. There should be no mortality if the case is seen early." In operating, he searches for the starting point of the infection, quickly drains from one of the flanks or pelvis depending upon the point principally affected. He employs the Fowler position if the starting point of the infection is below the umbilicus, while if in the upper part of the abdomen he uses the lateral position with head elevated. He never flushes the abdominal cavity, and always uses rectal instillations. He says, "I use a number of gauze wicks in a bundle, and cover with rubber tissue and then pull out a few at a time for two or three weeks, never replacing drains after removal."

George Tully Vaughan of Washington, D. C., says: "1. I operate in all cases of suppurative peritonitis, but not always at once. I think often a time can be chosen which will give the patient a maximum of chances for recovery. If his temperature and pulse are improving, vomiting has ceased—in other words, if the patient's symptoms are improving, I should wait for circumscribed abcesses. If the patient's symptoms are getting worse or at a standstill, I should operate at once. No. 2. I have operated on 31 patients, with 18 deaths and 13 recoveries—mortality 58 per cent. No. 3. My method of operating depends upon the cause of the peritonitis if I know it—whether appendicitis, typhoid perforation, or what; but in general it is to let out pus and drain, and not damage the tissues by pulling and

hauling and breaking up adhesions. In appendicitis, if the appendix is not easily found, I do not look for it; in other cases when the cause is obscure, I do not trouble the bowels in order to find it. No. 4. I do not employ the Fowler position. I do not agree that it is necessary and I believe that the same drainage may be obtained by raising the head of the bed—but I do not believe *that* is necessary. No. 5. As a rule I do not flush out the abdominal cavity after operation. No. 6. I do not use Murphy's rectal instillations, but I do use a method I used before I ever heard of Murphy's method, namely, the injection into the rectum every hour of from two to four ounces of salt solution. No. 7. I have not used antistreptococcic serum, as at this time I do not think it of any value. The future may furnish something of value in this line."

J. B. Murphy of Chicago writes: "In reply to your questions I would say to—

"No. 1. Yes, I always operate. There are no contraindications.

"No. 2. I have operated on 56 consecutive cases of General Diffuse Perforative Peritonitis, with two deaths."

No. 3. He makes his incision over the seat of the perforation when this can be determined. If the leak is in the appendix, he clamps this, ligates it in the crease made by the clamp, amputates, and drops the cecum back into the peritoneal cavity. He says that burial of the stump usually entails too much time and manipulation to warrant its execution. If the leak is an intestinal or gastric ulcer, he closes by a double or triple row of Lembert sutures. He never permits the opening of a perforation to remain patent. In draining, he uses a large fenestrated or split rubber tube passed to the bottom of the pelvis.

No. 4. He always employs the Fowler position.

"Nos. 5 and 6. I do not flush, and do not sponge. I use continuous proctoclysis. It is not a drop method, as you will note.

"No. 7. I use Streptolytic Serum."

Let us analyze these letters. In replying to question No. 1, asking whether they always operate in suppurative peritonitis and whether they have any contra-indications to operation, 13 answered that they invariably operate unless the patient is moribund, four operate except in the presence of certain contra-indications, two wait until the worst stage is past before operating, and one thinks that more would recover without operation. Question 2. (On how many cases have you operated, and with what mortality?) Eleven could not give the exact number of cases. The other nine reported 1,358 cases, with 114 deaths, or a mortality of 8.4 per cent. The Mayo brothers reported their mortality as 3%, but were unable to give the exact number of their cases. Query 3. (What is your method of operation and treatment?) Eighteen answered that they open and drain with more or less repair of the break which spread the infection. Two did not give their method. Query 4. (Do you employ the Fowler position?) Fourteen always employ it, four sometimes use it, and two have not tried it. Query 5. (Do you or do you not flush the abdominal cavity aftr operation?) Thirteen always do not, one generally does not, one flushes locally, two sometimes flush the cavity and thirteen always do. Query 6. (Do you employ Murphy's method of rectal instillation?) Fourteen always do, two sometimes do and four do not. Query 7. (Do you have favorable results from the use of antistreptococcic serum?) One did not answer the question, sixteen have had no favorable results from its use, two have had good results in some cases and not in others, and one (Murphy) always employs it. Query 8. (Do you endorse Morris' treatment by scientific neglect?) Eight did not answer the question or were not familiar with the method, five endorse the treatment, one partly does, and six do not.

Now let us separate the wheat from the chaff, selecting the seed which has brought forth the largest harvest of recoveries. In doing this we shall not go far afield if we choose a mode of procedure somewhat as follows:

Give no cathartics, food or even water by mouth at the onset. These measures increase peristalsis and, consequently, intra-abdominal strain, as well as dissemination of the infection. Wash out the stomach for the persistent vomiting, place the patient in the Fowler position and operate as soon as possible. Do not wait for shock, which is one of Death's last warnings, but look for the early symptoms which Murphy gives (2) as sudden and severe pain, nausea and often vomiting, local tenderness, circumscribed flatness on piano percussion, elevation of temperature above what the patient had before, hyperleukocytosis and absence of borborygmus. The importance of early diagnosis and early operation is pretty well understood today by the majority of surgeons, but the general practitioner, who is often the first one to see these cases, needs a great deal of education along this line. In operating, open the abdomen over the origin of the infection, if possible, and repair the break if this can be found without too much handling of the abdominal contents. The item of speed is a vital one. In a gangrenous appendicitis, Morris, Eisendrath, Ochsner and others merely tie off the appendix and drop it back into the peritoneal cavity. In still more urgent cases Morris (1) simply clamps the stump with a hemostatic forceps, drops hemostat and appendix into the cavity and removes them the following day. The fibrin should not be disturbed nor the pus wiped out.

Experience has shown that flushing the abdominal cavity is a dangerous procedure. Many surgeons, among whom are Van Buren Knott, Eisendrath, the Mayos, and others, have discarded flushing altogether, although they employed it as a matter of routine a few years ago (3). Whether it is the dissemination of bacteria which it accomplishes, or the washing out of our good friends and protectors, the phagocytes, or the dilution of the auto-protective fluids of the body, as the experiments of Dudgeon and Sargent (8) might suggest, we shall not know positively until animal experiments have taught us, but certain it is that many surgeons have reduced their morality 40 and 50 per cent by discarding their former procedure of giving the intestines a salt water bath after operation. I have only to refer the skeptical to the published reports of Le Conte (4), Mumford (5), Stuart McGuire (6) and many others.

After we have gotten into the abdominal cavity, let us do as he did who jumped into a bramble bush—let us get right out again. How many times after we have done a most scientific, aseptic operation, carefully wiping off all the fibrin in sight, mopping up all the pus we can find, eviscerating the patient, bringing out loop after loop of intestine to inspect, using antiseptics perhaps, and then flushing out the peritoneal cavity with gallons of saline solution—how many times has Nature tried to show us the folly of all this misguided exertion by letting the patient die on our hands. About all Nature asks of us in suppurative peritonitis is an opening to relieve tension and a drain of some kind to help her carry away the toxic material, and she can then get along quite comfortably without us.

Unless the operative opening is at the lowest part of the abdomen, one or two stab wounds may be made just above the pubes, and drainage tubes, preferably split and containing a gauze wick, introduced through the openings.

Drainage should be, not only by material, tube or wick, but by posture. It is scarcely necessary to mention the well-known researches of Robinson (7), Muscatello, and others, which have shown the

diaphragmatic region to be the place of greatest absorption in the peritoneal cavity. And it is for this reason that, by placing the patient in a sitting posture, we help Nature retard the absorption of toxins as well as assist drainage. This is so well known at the present time that only two surgeons wrote me that they do not employ the Fowler position.

In the after treatment there is one procedure of great importance, namely, Murphy's method of rectal instillation. We cannot say that we are doing the utmost for our patients unless we employ it. As given by Murphy (who, by the way, is not the originator of rectal instillations, but has perfected and systematized the method), it consists in the slow introduction of as much normal salt solution by rectum as the patient will take without rejection. The amount varies with the individual, but usually runs from eight ounces to a pint and a half per hour. The syringe or irrigator is suspended at such a height—usually from three to twelve inches—above the rectum—that the weight of the column of water just overcomes the intra-abdominal pressure. The rectal tube should have several small holes in its sides to prevent clogging with feces. The flow of solution should not be regulated by clamping the tube, as is usually done, but simply by raising or lowering the irrigator, thus allowing the intestinal gases to escape and bubble to the surface of the solution. The irrigator is kept warm by surrounding it with hot water bottles or, as the Germans do, by placing it in a bucket and packing sawdust or other non-conducting material around it to retain the heat. I have gone somewhat into detail in this matter because of its exceeding value when properly given.

The administration of antistreptococcic serum has not been attended with satisfactory results in the practice of most surgeons. If it were used only in streptococcus infections the results might be better perhaps, but even in peritonitis due to the streptococcus the serum is not a distinct success at the present time, and might well be discarded.

In conclusion, let me emphasize the fact we are so apt to forget—that we are simply co-workers with Nature. And so we must not work *against* Nature, but *with* her. Let us not break down any of her delicate fibrin defenses nor wash out her phagocytes and bactericidal fluids. Let us study her plans and help her along her own paths—and the 100 per cent mortality in diffuse suppurative peritonitis will soon be a dim and ghoulish memory of the dark ages of surgery.

1. Morris, Journal A. M. A., Aug. 22, 1908
2. Murphy, Surg., Gynecol. & Obstet., June, 1908
3. Young, Jour. A. M. A., Aug. 26, 1905
4. Le Conte, Annals of Surg., Feb., 1906
5. Mumford, New York Med. Jour., Jan. 12, 1907
6. Stuart McGuire, Jour. A. M. A., Mar. 28, 1908
7. Robinson, "The Peritoneum," Part I, 288
8. Dudgeon & Sargent, "The Bact. of Peritonitis," '05

A Study of the Urinary Acidity and Its Relations.—Henry R. Harrower, of Chicago, considers a quantitative determination of the acidity of the urine in a twenty-four hours' specimen of great value, and absolutely necessary in the treatment of most diseases. The index of urinary acidity varies with different states of metabolism, especially in conditions of autointoxication. In 35 per cent. of the cases examined by the author albumin and casts accompanied high degrees of acidity. There is a distinct association between high acidity and putrefaction of intestinal contents; in diabetes an excess of acid is the rule; the reduction of acidity is an important prophylactic measure. The best method of estimating acidity is by titrating a definite quantity of urine with an alkali solution of known strength, using phenolphthalein as an indictator.—*Medical Record,* June 5, 1909.

APPENDICOSTOMY*

J. A. Mac MILLAN, M.D.,
Detroit.

Appendicostomy is an operation by which the appendix is fixed in the abdominal wall, its protruding end excised, and its lumen utilized as a means of irrigating the colon. The operation was devised as a substitute for right inguinal colostomy, suitable to those cases of colonic disease in which it is not necessary or desirable to have a fecal outlet in this region. It was performed for the first time by Robert F. Weir, and since that time it has been used by a number of surgeons with very satisfactory results.

Indications.

Appendicostomy has been employed chiefly in amebic dysentery, muco-membranous colitis, and syphilitic ulceration of the colon, and in these conditions it has proved almost uniformly successful. According to Dr. James Tuttle, this operation is indicated in all chronic inflammatory diseases of the colon. Dr. Tuttle has had more experience with it than any other surgeon, and his confidence in its efficacy in this class of cases seems to increase. It is well-known that these conditions are seldom amenable to treatment by non-operative measures. In a good many cases a degree of temporary relief is obtained by rigid adherence to a prescribed diet, medication, and irrigation per rectum, but very rarely is a permanent cure effected in this way. The only curative treatment of chronic inflammatory disease of the colon, after it has become thoroughly established, is surgical. That is to say, when there are unmistakable signs of chronic colitis, with quantities of mucus in the stool or blood and pus, and constant or periodic diarrhea has continued for a year, a cure will not be affected without an operation.

There are three surgical procedures that have been used in the last decade.

First—Extirpation of the colon. On the ground that the large bowel is at best a useless organ, Dr. Arbuthnot Lane advocates its complete extirpation in all chronic cases. He makes an anastomosis between the ileum and the sigmoid. He has performed this operation many times with good results. This procedure is too formidable to gain much favor with the profession.

Second—Right inguinal colostomy or cecostomy. By this operation an artificial anus is established on the right side, by means of which physiological rest is secured for the colon. At the same time complete irrigation can be practiced. Physiological rest and irrigation for a few months will establish a cure in almost all cases. However, a colostomy in this region is a most repulsive condition on account of the liquid condition of the stool. In addition to this the danger of infection is much greater than in a colostomy on the left side. Another objection to this operation is the difficulty of closing the artificial anus.

Third—Cecal fistula. Some years ago Kader devised a method of forming a fistula into the cecum through which irrigation of the colon can be carried on and through which fecal material does

*Read at the Manistee meeting of the Michigan State Medical Society, June, 1908.

not escape. In this Kader operation an opening is made into the cecum, the serous coat is inverted and a tube inserted and retained. In this way a valve is made which effectually prevents the escape of the bowel contents and at the same time permits irrigation of the colon. The inverted serous coat forms a valve.

It is manifest that these operations—extirpation of the colon, right inguinal colostomy, and the Kader cecal fistula, are formidable procedures, difficult to perform, and attended by considerable danger. Appendicostomy meets the indications for which these operations were performed, is not difficult to do, and is practically free from danger.

The opening of an appendicostomy may be obliterated at any time when it is thought advisable to discontinue the irrigations. This is performed without any operation, and in this respect it is in marked contrast with the difficult and dangerous surgical procedure that is required to close an artificial anus on the right side. Accordingly appendicostomy is indicated in many cases of inflammatory disease of the colon in which a surgeon would hesitate to recommend a colostomy. The opening in the appendix supplies a means by which the colon can be irrigated easily and thoroughly and as frequently as may be desired.

However, there are certain mild cases of mucous colitis of comparatively short duration which I believe can be cured by irrigation per rectum, proper diet and medication. At least I have a number of such cases that are apparently cured after treatment of this kind. In all severe cases of chronic colitis by which the patients are kept in prolonged misery, weakness, or suffering, appendicostomy is unquestionably indicated. In October, 1907, I used appendicostomy on a patient for the relief of chronic ulcerative colitis with which there was associated chronic ulcers of the rectum. The irrigation through the appendix effected a speedy relief of the diarrhea, and the patient's general condition was greatly improved. However, there was no improvement in the condition of the rectum, and after several months during which the irrigation was used on an average of once in two days, there seemed to be an aggravation of the proctitis. The method of irrigation was modified in various ways without any benefit to the rectal ulcers. Tubes of various sizes and lengths were used in the rectum to carry off the irrigating fluid, but none of these seemed to protect the rectum from irritation. The fluid would invariably distend the rectum and escape around the tube. From my experience with these cases I am convinced that colonic irrigation through the appendix is most effective for the cure of chronic inflammatory disease in the cecum, ascending, transverse, and descending colon. For disease of the sigmoid flexure its efficacy is not so marked. The decline in the therapeutic value of the irrigation as we reach the lower portion of the large bowel is due to the fact that the active peristalsis caused by the fluid sweeps the colonic contents to the sigmoid and rectum where there is some resistance to the flow. Accordingly there is undue distention of the rectum. Then there is generally retention of a portion of the fluid and reinfection may take place. In addition to this there is the fact to be considered that liquids act as a foreign body in the rectum, whereas in the cecum and ascending colon the normal contents are generally liquid. Appendicostomy provides a means by which a perfect lavage of the colon can be effected daily as long as it may be considered desirable, with but little inconvenience or discomfort. Thorough cleansing of the colon by irrigation per rectum is possible, but is very difficult to obtain and is impracticable. I believe, therefore, that Dr. Wier and Dr. Tuttle, by means of this

surgical procedure, have provided a method of treating certain very distressing diseases of the colon heretofore beyond the resources of the profession.

Technique of Operation.

The abdominal incision should be made so as to give the most ready access to the appendix. Dr. Tuttle recommends the incision to be made an inch and one-half to the inner side of the anterior superior spinous process of the ilium, and at right angles to a line extending from this process to the umbilicus. An incision in this location usually admits the fingers into the abdominal cavity just to the outer side of the cecum, and the appendix can be immediately brought into the wound without any unnecessary manipulation of the intestines. As these patients are generally exhausted by prolonged illness before the operation is performed they do not endure much handling of the bowels. Then in this operation the cecum is anchored to the anterior abdominal wall and it has been suggested that there might be danger that a loop of intestine would get entangled around this anchorage. Such a danger is diminished by having the cecum attached well to the outer portion of the abdominal wall. It is necessary to have the abdominal incision close to the cecum, otherwise the passage along the appendix would not be direct and there would be difficulty in inserting the catheter. Accordingly it is recommended to locate accurately the cecum before the abdominal incision is made, so that when the appendix is fixed in the abdominal wall it may form a direct line to the bowel. The length of the abdominal incision depends upon the nature of the case. In the majority of cases the incision should be short, for there are usually no adhesions, and all that is required is an opening sufficiently large to admit two fingers. Having drawn the appendix into the wound the second important part of the technique is encountered and concerns the mesoappendix and the appendiceal arteries. In the majority of cases there is but one appendiceal artery. It extends along the free margin of the mesentery, giving off branches to the appendix. These branches are at right angles to the main artery, and form a free anastomosis in the wall of the appendix. Some of the earliest papers on this subject recommended tying the appendiceal artery and the separation of the appendix from its mesentery. An examination of this arterial supply will convince any one that to cut off the main artery must endanger the whole distal end of the appendix. As long as the gangrene is limited to the terminal half inch no bad results will follow, but in some cases I would hesitate to tie the main artery. My experience leads me to believe that it is not necessary to interfere with the appendiceal artery or the mesoappendix unless it is found impossible to draw the appendix into the wound with the mesentery intact. Two sutures on either side of the base of the appendix serve to secure the adhesion of the cecum to the abdominal wall. The abdominal incision is closed layer by layer and the appendix sutured, care being taken to avoid any constriction. It is safer not to open the appendix within forty-eight hours after the operation. It may then be excised without an anesthetic, local or general. The remaining portion should extend about half an inch beyond the surface of the skin. The caliber of the appendix may be increased by the passage of gum elastic catheters. Warm sterilized water serves as well as any of the antiseptic solutions for irrigation in the majority of cases. I have found that at first the water in the colon caused violent peristalsis. In fact the water seems to be carried from the cecum to the rectum by peristalsis and not by the force of the irrigator or gravitation. After the use of two or three quarts the water comes away clear. The use of a large amount of water generally produced some irritation of the sphinteric region of the rectum.

This may be avoided by keeping a proctoscope in the rectum during the irrigation. In a case of chronic ulceration of the rectum and colon I found that irrigation through the appendix cured the colonic disease. The evidence of colitis disappeared, but the proctitis was apparently aggravated. In addition to this last feature there are some other interesting phenomena connected with appendicostomy. Stretching of the appendix produces pain in the region of the umbilicus or often a little to the left of the median line. Sometimes a colicky pain is felt in the epigastrium. As has already been stated, the irrigation always produced violent and somewhat painful peristalsis in the colon. By means of an appendicostomy the colon can be freed from fecal material in less than twenty minutes. This can be accomplished only occasionally by irrigation per rectum.

The opening of an appendicostomy can be closed by one application of nitric acid to the mucous membrane. In this respect it is in marked contrast with colostomy.

The results obtained by appendicostomy have demonstrated that it is an important advance in the treatment of amebic dysentery; however, it has not been in use sufficiently long to have secured its definite place in the treatment of colonic disease. From a theoretical standpoint it is inferior to colostomy in that it does not afford complete physiological rest to the diseased portion. When the cause of the chronic inflammatory disease of the colon is imbedded in its wall, a colostomy, when possible, is indicated; when, however, the perpetuation of the inflammation is due to the irritation of the contents of the colon, appendicostomy fills the requirements.

Oral Administration of Antitoxins.

Studies in anaphylaxis have called our attention to the dangers of serum injections and have led to experimental work the object of which has been to discover some administration of sera that would minimize or remove these dangers.

McClintock and King (Jour. Infect. Dis. 1909, VI. 46) report experiments on the oral administration of antitoxins that have an important bearing, if they are confirmed, upon this matter, and point to a method that apparently removes all danger. Their communication is not suited to a short review. The conclusions are as follows:

(1) Toxins and antitoxins when given by mouth are usually rendered inert by the digestive processes. Their therapeutic or immunizing value is uncertain and not to be relied upon.

(2) If digestion is inhibited, which may be readily accomplished by the use of appropriate drugs, toxins and antitoxins are absorbed unchanged and apparently in sufficient quantity, and with such uniformity as to warrant the use of this method for therapeutic and immunizing purposes.

(3) In treating children with antitoxin per mouth, the following method has given uniform and satisfactory results: One half-hour before administering the serum the child is given one glass of 1 per cent. sodium bicarbonate solution. When antitoxin is given there is added to it one minim of fluid extract of opium and from four to ten minims of a saturated solution of salol in chloroform. When possible no food should be given for at least four hours before administering the serum.

(4) In nineteen children and hundreds of animals used in these experiments, there was no evidence of any "serum sickness" or anaphylaxis.

(5) In our opinion the oral method of administering antitoxins of tetanus and diphtheria is the preferable one for prophylaxis—

(a) On account of the absence of danger and the ease of administration.

(b) Because the cost may be materially lessened.

(6) The hypodermic method of administering sera for curative purposes is the only one to be recommended unless extensive clinical experience should show that the oral method is especially efficacious.

(7) A relatively high degree of immunity may be produced in animals by the oral administration of toxins if the absorption of the same is promoted by such means as we have suggested.—*Jour. Inf. Diseases*, vi., p. 46.

THE VALUE OF PHYSICS APPLIED TO THE PRACTICE OF MEDICINE*

ALMON T. GODFREY, A.M., M.D.,
Holland.

A physician must be a man of action, one versed in scientific truths, manipulatory skill, experimental methods; he must be fully competent to act without first consulting a reference book; he must possess the ability to generalize from observed phenomena, the capacity of close and accurate observation, and of systematic methods, and in no way can he better cultivate in himself a capacity for these things than by laboratory practice. Much, if not all, of this is taught in physics. Physics also develops the power of logical thought in drawing conclusions from observed data; it affords an opportunity for valuable practice in the systematic recording of observations; it stimulates the ability to express one's thoughts in concise and unambiguous terms; it teaches neatness and dexterity of manipulation. Practice of this kind makes a man independent and furnishes him with just the mental equipment needed in the life of a physician. This training is certainly highly essential in the general make-up of a physician. Does not, and should not, every successful and progressive physician put into practice each and every one of these acquirements during every day of his practice of medicine and surgery?

One of our members recently said to me, "All men I now divide into two classes, according to whether they dodge my automobile or not." "And how do you classify them on that score?" said I. "The quick and the dead," said he. Well, I believe we can safely divide all physicians into two classes, according to whether they dodge putting into their actual practice the application of the fundamental principles of physics, or are simply content to be knocked out of the way and defeated by the multitude of things in both medicine and surgery which they could easily and successfully overcome would they, and could they, intelligently apply those principles. Times have changed, and are still rapidly changing, and the physician who succeeds now is the man who seizes every opportunity offered in gaining knowledge to combat disease, and who never lets go until he has mastered every detail that is within his power.

We will not attempt in this short paper to enumerate in detail all of the ways in which a physician can apply the principles of physics, and find them of value in the practice of medicine, because the field is too broad and extensive, but we will, in a general way, endeavor to point out some of the more important, and suggest in a way how the physician is dependent upon them, although probably the average practitioner seldom stops to consider their application, or how greatly his success or failure depends upon them. It is true that many and many a physician applies these principles time and time again, day in and day out, and yet who does it entirely unconsciously, or else is wholly ignorant of the fact that he is making use of anything that pertains in the least to physics.

*Read before the Ottawa County Medical Society, Nov. 10, 1908.

Dr. J. S. Haldane, in his address as president of the section of physiology of the British Association, printed in *Nature* (London, October 1, 1908), says: "When we look back on the history of physiology it seems perfectly evident that physiological progress has been dependent on the progress of physics and chemistry. On this point there is no room for doubt. Physiology depends at every turn on physics and chemistry, and its future progress will certainly be equally dependent on advances in physical and chemical knowledge. This consideration has, I imagine, weighed very heavily in the minds of those physiologists who have concluded that physiology is nothing but applied physics and chemistry."

Such properties as porosity, absorption, diffusion, and osmosis play an important part in the digestion and assimilation of medicines and nutritive media administered by the physician, and if the tissues of the body are not kept as nearly as possible in their normal condition, how greatly will their adaptability in favoring the physical forces which influence porosity, absorption, diffusion, and osmosis be decreased, and if they be decreased in these regards, it is easily foreseen that the general nutrition will suffer, and any medication will fall far short of producing its desired effect. Therefore, on this account it greatly behooves the physician to study these physical properties and the laws which govern them, and thus take advantage of every possible means to render the conditions and circumstances as nearly normal as possible, so that every medicine given or any nourishment taken will be properly digested and assimilated and produce its most curative or remedial result.

Osmosis, together with the laws of osmotic pressure, is a wonderful and intensely interesting study in itself, and only this past summer did a scientist tell me that he had spent practically his whole life studying this one subject, and that today he knew but little more about it than when he began.

A physician should also fully understand the laws of liquids, gases, pressure of fluids, and capillary phenomena, because a full comprehension of these can be of great diagnostic value. How necessary it is in making a physical diagnosis to understand the physical properties of sound. A physician cannot successfully interpret his findings if he does not recognize differences in pitch. If he does not understand the differences in pitch, how can he decide whether the medium of mission is gas, liquid, or solid?

If one is to treat diseases of the ear, how can he expect to be successful in the majority of cases if he does not understand and apply the principles of vibration, intensity, and loudness of sound?

A surgeon would surely be of little worth if he did not understand and possess the ability to apply his knowledge of the principles of physics. Taking an accurate measurement would seem to be a very easy and simple thing, and yet it is marvelous how many various answers will result from having a class of thirty or forty students measure the length of a table or a straight line. A complete understanding of mechanical advantage, the laws of levers, elasticity, tenacity, and the workings of the siphon are surely of every-day application in the life of a surgeon or in that of the general practitioner.

How vastly important are the fundamental principles of heat and temperature. The little theremometer which is used daily by every physician is certainly an indispensable article. How often do we make use of the principles of evaporation, and the transmission of heat!

In this day when such great stress is being laid on hygiene and sanitation, it behooves every practitioner to study the subject of ventilation, for how few of our public buildings and residences are properly ventilated.

The subject of light also holds an important place in the consideration of a physician, for we are very frequently dealing with questions of reflection of light, focus, lens, color, and more particularly are we making use of the microscope, the workings and principles of which are so very important to physicians of today. The time is coming, and is not far distant, when much more attention will be given to this subject of light, especially in its application to the lighting of school-rooms.

Then, again, in this age when such strides are being made in the application of electricity, the doctor must understand its uses in the practice of medicine, for its applications in that line are becoming more numerous every day.

The value of physics in the practice of medicine is, indeed, great, and far-reaching, as we have shown; there is scarcely a single principle of physics that is not made use of by the practicing physician.

Had we the time, it would certainly be intensely interesting to go into this subject much deeper and discuss in considerable detail how and where application of the many laws and principles of physics are applicable and serviceable in the practice of medicine.

HYPERTROPHIC STENOSIS OF THE PYLORUS IN INFANTS*

W. M. DONALD, M.D.,
Detroit.

This disease is well known to pediatricians, but seems to be practically unknown to the great mass of the profession. There has been practically nothing new discovered, or recorded, concerning it during the past two years. I have to report, however, a series of cases occurring in one family, which seem to be unique in the annals of the disease, and which should prove interesting, if not valuable.

Since the disease seems relatively unfamiliar to the practitioners, I will sketch shortly the symptomatology and the most approved treatment of the condition; and then report, somewhat in extenso, my own cases.

This disease of Hypertrophic Stenosis of the Pylorus in infants seems to have been practically unknown to anyone until about five years ago. The symptom-complex of the disease was very well known, but careful clinical research, and careful search by autopsy, had failed to reveal the cause of the condition already suggested.

The symptom-complex was as follows:

The children in early infancy (in 80% males) commenced to vomit within the first month of life, usually about the end of the third week. The vomiting was explosive, but not accompanied by nausea; came on at progressively shorter intervals, and was accompanied by sweet breath and constipation. The children had no evidence of gastric catarrh, nor were they subject to the simple regurgitation of infants. They suffered from progressive wasting; from dilatation of the stomach; and showed, sooner or later, a peristalsis of the stomach, visible through the abdominal wall. Most of the cases died, being unamenable to treatment. Some English genius, his name

*Read at the Manistee meeting of the Michigan State Medical Society, June, 1908.

now being unknown to me, discovered, after careful search, that all of these cases showed a more or less marked hypertrophy of the pylorus. He discovered that this hypertrophy, while great, was usually confined to the circular muscular fibres of the pylorus; but that, if the patient survived the disease sufficiently long, the spasm of the pylorus (which was apparently a part of the disease) threw the mucous membrane of the pylorus into longitudinal folds, which in many cases acted as a sort of ball valve, occluding completely the pyloric opening. This valve-like arrangement of the pyloric folds accounted for the fact, which had been somewhat of a puzzler, that many of these cases would permit of the passage of a good-sized probe, or even of a good-sized lead pencil, and would still show the evidences of pyloric occlusion. I show you here today in one of my cases a condition of this kind, where a pencil is readily inserted, but where no fluid could be forced from the stomach into the duodenum. This patient succumbed to persistent vomiting within a few days of its birth.

One observer has recently described the appearance of the pylorus in these cases, as it dips into the duodenum, as very similar to the appearance of the os uteri as it dips into the vagina. This, again, I will demonstrate to you with a microscopic slide, which I have had made from one of my cases. A singular condition of the disease is its appearance so often in males—a point which I emphasize on account of its etiological value—at least 80% occurring in the male sex.

The English observers, who are practically alone in their work in this field, seem to have agreed fairly well in dividing these cases into three types:

First, a simple spasm of the pylorus, amenable to simple medicinal and dietetic treatment.

Second, cases characterized by true hypertrophy of the pylorus, moderate in degree, such cases yielding with difficulty to the same medicinal and dietetic treatment.

Third, cases of severe hypertrophy often having this ball-like closure of the pylorus, and which can only be helped by resorting to surgical measures.

That the disease is not common, as diseases go, is evidenced by the fact that at the Great Ormond Street Hospital for sick children, in London, England, only thirty-nine cases are reported in ten years. Of these thirty-nine cases, thirty-five were males; and of the thirty-nine cases, thirty-four died. It must be remembered, however, that these thirty-nine cases included all of those which were reported before clinicians understood the true nature of the disease, and before they understood the scientific treatment of the same.

Etiologically little is known. Family history seems to have no bearing on the disease; and the fact of its more frequent occurrence in males is practically the only etiological factor thus far recorded.

One observer has suggested that the disease may be a reversion to ancestral type, a true atavistic tendency, comparing, as he does, the pylorus to the gizzard in the bird. One must confess that this seems rather far-fetched.

The treatment of the disease is medicinal and surgical. In the milder cases, the treatment is both medicinal and surgical, or, rather, dietetic and surgical. The frequent feeding of small quantities of food, non-irritating in character, and daily washing of the stomach through a tube, as a rule, gives excellent results. In the more severe cases, frequent changes of the food may be indicated, and still more frequent feedings in smaller quantities; and occasionally sedatives or anti-spasmodics. In the third class, the still more severe type, it would seem that nothing can help but surgical measures, and in these cases

expert opinion seems to be divided between dilatation of the pylorus through the stomach; section of the redundant folds of the mucous membrane of the pylorus (what is known as pyloro plasty); posterior gastro-enterostomy; and excision of the pylorus.

Report of Cases.

The cases I wish to report occurred in a family who have been patients of mine during the last six years. The family history is absolutely negative. The parents are both healthy, and three children, now living, are likewise perfectly healthy. The first child born to them in 1897 is living. The second child was born in 1899 and lived five months, vomiting at intervals during that period. This seems to have been a case, which, had the disease been known at the time, could have been helped by dietetic measures. A postmortem in this child revealed a dilated stomach and empty intestines, which meant, almost to a certainty, pyloric stenosis, but the pathological overgrowth of the pylorus was not recognized, and the cause of the difficulty was considered too obscure to solve.

The third child was a boy, born in 1901, living seven days; and likewise vomiting from birth.

The fourth and fifth children were girls, born healthy, and are still living, aged two and five years.

The sixth was a girl; was delivered by a colleague during my absence from the city in 1906; and lived but three days, vomiting from the hour of its birth.

The seventh was a girl, was delivered by me on December 12th, 1907, and lived until December 17th, 1907 (five days). The postmortem on this last child disclosed the condition which I have described to you, and I present to you today the stomach in this case. There is no question as to the character of the disease in this last case, which I attended. As for the others, the symptoms are practically positive as to the identity of them, which we have proven by postmortem.

Pediatric Don'ts.—Karl H. Goldstone, M. D., in the *Journal of the Medical Society of New Jersey,* says that it is just as important to realize what not to do, as it is to know the accrued facts. Some of the things one is not to do follow.

Don't, above all things, fail to take a complete anamnesis before attempting to arrive at a diagnosis. In no other branch of our science does a detailed history go further in aiding to formulate a correct understanding of disease in pediatrics.

Don't fail to remove every vestige of clothing before attempting to examine a child. You may overlook evidences of disease which have vital import.

Don't under any circumstances fail in your routine to examine the vagina in a female child. Mothers either from false embarrassment or neglect, fail to call attention to the presence of any discharge, and don't lose sight of the fact that gonorrhea, while amenable to treatment in the early part of its course, later on is almost impossible to cure.

Don't ever neglect to percuss for the thymus in infants. Remember that a large percentage of sudden deaths in infancy is due to hyperplasia of the thymus (Baginsky-Grawitz).

Don't forget to put your finger in the throat of a child who comes to you with a history of a sudden aversion to taking the breast, and in whom the cry is peculiar, and who has dyspnea without there being signs in the lungs. I find that retropharyngeal abscess is more frequently overlooked than any malady of childhood. (See author *N. Y. Medical Journal,* February 16, 1906.)

Don't hesitate in making a rectal examination in a child who is passing blood via the anus. Intussusception is another condition that is rarely recognized until brought to the hospital, and then the child is usually in a moribund state.

Don't fail to take a culture of the throat in any infant brought to you with a dry metallic cough and a slight rise in temperature. Laryngeal diphtheria is much more common than one would be led to believe from reports.

Don't resort to artificial feeding unless absolutely compelled to; poor mother's milk is oftimes better than the best regulated artificial feeding. (Cammerer.)

Don't, if you consider yourself a reputable physician, ever resort to the term "He will grow out of it." The only things that children grow out of is their clothing.

Don't expect to find the morbus caeruleus present in every case of congenital heart disease. For as Jules Simon, the French writer, has shown, there may be cyanose blanche or pallor of the skin.

Don't designate every twitching in a child as chorea. Remember as a result of mimicry, children develop habit spasm.

INTESTINAL OBSTRUCTION*

A. J. HERRINGTON, M. D.,
Bad Axe.

Intestinal obstruction, as its name indicates, is an interference with the passage of the bowel contents. Murphy, in my opinion, gives the clearest description of this condition.

The obstruction may be: First, adynamic or paralytic; second, dynamic or spasmodic; third, mechanical.

Etiology.

(a) The adynamic form constitutes 68 per cent; it can be caused by an interference with the nerve supply, as injuries to the spinal cord or afferent nerves. (b) Reflex: Renal or hepatic colic, twist of pedicle of tumors; strangulation of omentum; compression of ovary; diaphragmatic pleurisy. (c) Sepsis; ruptured appendix, gall bladder, or pus tubes; perforation of ulcer of stomach or intestines; wounds of the peritoneum.

The dymanic constitutes 2 per cent, toxic as in lead poisoning or tyrotoxicon.

The mechanical constitutes 28 per cent, hernias, twists, intussusceptions, bands, tumors (internal or external to intestines); cicatricial narrowing, foreign bodies and fecal impaction.

Symptoms.

Pain is usually sudden in onset, paroxysmal in character. It grows in intensity, especially in mechanical form. Vomiting; first, ordinary contents of stomach, then bilious material, finally intestinal contents. It is impossible to get a movement of bowels, except possibly a slight amount from below the obstruction. Tympanites follows later and is marked, especially in the paralytic form. (Here there is a complete absence of peristalsis.) In thin walled abdomens the peristalsis may be seen and the point of obstruction may be located with a stethoscope by noticing the point where the sounds cease. In localized septic peritonitis there is absence of sounds in affected portions, while they may be heard in the other parts. Fever is absent in all mechanical cases and is typical of all septic cases.

Diagnosis.

For purposes of treatment it is very important to ascertain the cause, if possible. Careful attention to the history will aid in distinguishing between that due to interference with the nerve supply, hepatic or renal colic, and that due to sepsis. A careful examination will locate the point of origin in septic cases if the process has not gone too long,—for example, the right iliac region in appendicitis, etc.

In reflex cases the vomiting ceases in time. In mechanical it grows continually worse. No case should be allowed to go along until fecal vomiting ensues. Finally, by giving enemas, with no passage of flatus or feces, the diagnosis may be made with certainty.

Prognosis.

In many of the paralytic and reflex cases the prognosis is good under medicinal treatment; in mechanical, absolutely bad. About 50 per cent mortal-

*Read before the Huron County Medical Society, Bad Axe, January 11, 1909.

ity, sometimes as high as 80 per cent, occurs in surgical treatment at the present time. When a prompt diagnosis is made it can be reduced markedly.

Treatment.

As indicated above, the reflex and paralytic cases may be treated medicinally, unless the underlying cause requires surgical treatment itself, as twisted pedicles of ovarian tumors, etc. Purges should be withheld until an exact diagnosis can be made, if possible; morphine also should be withheld and used only in preparation for operation. It may be of interest to cite four cases which came under my observation during the past year.

The first was a patient of Dr. Sellars of Pinnebog, Michigan. Mrs. E., a woman of 55 or 60 years of age, married, had been troubled with increasing constipation for a year or more. A short time before I saw her, the obstipation being almost complete she consulted Dr. Munro, who found a new growth, high up. On her return home, becoming still worse, Dr. Sellars was called and confirmed the diagnosis previously given. When I saw her, the condition was still worse. I advised a colostomy for relief of vomiting and pain. On operating I found the growth could be withdrawn from the abdomen and that it involved the lower part of the sigmoid flexure. I, with consent of husband, excised the growth, about 1½ inches of bowel and an enlarged mesenteric gland, and stitched the ends together. She had rather a stormy time for two or three days, then made a rapid recovery. She has gained many pounds, and states that she is better than she has been for years. It is of interest to note that a plum pit, imbedded in the opening, made the obstruction complete.

Case No. 2. Mr. S., a man of 60 years, whose previous history was negative, except for an attack of appendicitis; during a hard day's work on a land roller, he was taken with agonizing pains in bowels, vomiting, inability to get bowel passage and slight tympanites. His pulse was not very rapid. Temperature was normal. Dr. Sellars promptly made the diagnosis of obstruction. I confirmed this and operated as soon as he could be prepared. I found the cause to be a band of adhesion involving the appendix and surrounding surface. It completely obstructed the gut. This was removed, together with the appendix. He also made a prompt recovery.

Case No. 3. Mr. J., a man of 55, a patient of Dr. Dawson of Pigeon, Michigan, was taken ill after a hard day's work. The doctor when called made a prompt diagnosis of obstruction from usual symptoms of pain, vomiting, inability to move bowels and collapse. When I saw him a few hours later, all the symptoms were intensified. Immediate operation was advised and accepted, and patient removed to a hospital twenty miles away, by means of an auto. On opening abdomen the intestines were found reddened and a good deal of serum was present. I found a part of ileum bound down by a large band. This was divided and abdomen closed. A prompt recovery followed.

Case No. 4. The next case, Mr. L., was one of my own. I had operated on him for a gangrenous and perforated appendix some months previous. He had recovered completely. After a day's work in the woods, he took a drink of cold water and rode home, three miles through the cold. On his way he was attacked by extreme pain, which he attributed to the cold water. The pain, followed by vomiting, got so violent that I was sent for. I found him with a temperature normal, no tenderness or distension, pulse normal, respiration normal. I could find nothing to account for pain and vomiting; so I gave opiate, advised an enema and was to be called in the morning, if no better. The next day, he seemed easy until evening, when pain and vomiting got worse. I was again called and diagnosed obstruction, as no bowel movement had followed. At the request of his parents, he was left until morning. I then found him no better, brought him to hospital and after two fruitless enemas operated again. I found a band tying down a portion of ileum, which was pretty dark in color. Much serum was present. The band was divided—with another recovery scored.

All four recoveries I consider due to skill shown in diagnosis and to prompt operation. It is instructive to know that three cases were due to bands resulting from old appendicitis, and it offers another argument in favor of prompt operating in cases of the disease.

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JULY

Editorial

A LITTLE MORE CONFIDENCE AND RESPECT FOR OURSELVES AND OUR CALLING, A LITTLE MORE TOLERANCE FOR OUR FELLOW-WORKERS, AND A RECOGNITION OF THIS ALL-IMPORTANT FACT, THAT THE PUBLIC WILL TRUST AND RESPECT US ONLY TO THE EXTENT TO WHICH WE TRUST AND RESPECT EACH OTHER—THIS IS THE SECRET OF A NEW ERA OF PROFESSIONAL PROSPERITY.—*American Medicine.*

♣ ♣ ♣

Medical Expert Testimony. It has been said that whenever the Medical Jurisprudence Society of Philadelphia has no material for a program, a symposium on expert testimony is announced, a large audience gathers and a heated debate follows. The evils which are so common in medical testimony, are also as frequent in connection with expert testimony of all forms, whether mechanical, financial, or regarding realty values. It must not, therefore, be assumed that the criticism so often launched at the system, is directed entirely at the medical man.

In every debate on expert testimony, one conclusion is always reached and that conclusion is that medical expert testimony has fallen into disrepute, and has, in very many cases, brought ridicule upon the medical profession. That there is need for reform is believed by all who have given the matter serious thought; yet, the solution of the difficulty and the cure for the evils have not been readily formulated.

Perhaps the greatest evil is the method of selecting experts. As it is now, very little attention is given in most cases to the real ability of the men who are called to testify. One may read in the evening paper that a certain doctor was called as an expert in a street railway case involving damages for a fractured arm, and in the morning paper that the same doctor gave expert testimony as to the mental condition of the defendant in the latest murder sensation. We are frequently treated to this exhibition of the wonderful many-sidedness of these experts. And the public is wise enough to see the absurdity of it all and to laugh not only at the "experts," but at all the rest of us as well. The fault, however, is not in us, but in the system.

The continental method of appointing experts is an improvement on that in vogue in most of our states. In Europe, the experts are selected by the judges, and it is considered an honor to serve the court in this capacity. The expert, not being a hireling of either the prosecution or the defense, is able to give an unbiased, and therefore a strictly scientific opinion, for no matter how honest a man may be, the psychological influence of a retaining fee will inevitably color opinion, such is human nature. Such a method of selection, however, is not in accord with our democratic principles of government and would probably be a failure, were it to be tried here.

To eliminate this element of bias, as well as to provide men who are really competent, was the object kept in view by those who are responsible for the new statute in New York State. This provides for a special panel of men, nominated for each section of the state, and from the names in these lists the judges select the experts. It will be interesting

to see what the result of this system will be. Many are skeptical, believing that the pernicious influences which sooner or later pervade the appointment of all such bodies of men, will be felt in the selection of these panels of experts.

* * *

The Michigan law on the subject is known to but few physicians; at least, we would suppose this to be the case from conversation with a number of the profession throughout the state. The full text of the law in this state is as follows:

Public Acts, 1905.

AN ACT to regulate the employment of expert witnesses.

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Section 1. No expert witness shall be paid or receive as compensation in any given case, for his services as such, a sum in excess of the ordinary witness fees provided by law, unless the Court before whom such witness is to appear or has appeared awards a larger sum; and any such witness who shall directly or indirectly receive a larger amount than such award, and any person who shall pay such witness a larger sum than such award, shall be guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment in the county jail not to exceed one year, or both, in the discretion of the Court, and may further be punished for contempt.

Section 2. No more than three experts shall be allowed to testify on either side as to the same issue in any given case, except in criminal prosecutions for homicide; PROVIDED, the court trying such case may in its discretion permit an additional number of witnesses to testify as experts.

Section 3. In criminal cases for homicide where the issues involve expert knowledge or opinion the Court shall appoint one or more suitable disinterested persons, not exceeding three, to investigate such issues and testify at the trial; and the compensation of such person or persons shall be fixed by the Court and paid by the county where indictment was found, and the fact that such witness or witnesses have been so appointed shall be made known to the jury. This provision shall not preclude either prosecution or defense from using other expert witnesses at the trial.

Section 4. This act shall not be applicable to witnesses testifying to the established facts or deductions of science, nor to any other specific facts, but only to witnesses testifying to matters of opinion.

Approved June 7, 1905.

* * *

The first and only endowed laboratory in Detroit was formally opened on Wednesday, June sixteenth. It is at the Woman's Hospital and Infants' Home and is the gift of Mrs. Grace Whitney Hoff, a Detroit woman who lives for the most part in Paris, and whose charities have become notable both here and abroad. The gift includes not only the expense of equipment but also of maintenance for a term of five years. The laboratory is thoroughly, though modestly, equipped and stands ready for use by those who combine capability, leisure, incentive, and acceptability to the staff. Routine analytical work, such as urinalysis, and clinical bacteriologic and blood examinations, will probably be taken care of by the internes. Other work, requiring especial skill and knowledge, will be in charge of the laboratory staff. Under the name "Grace Whitney Hoff Research Laboratory" there is opportunity offered for original investigative work of any kind, either in connection with the hospital or independent of it.

The profession ought to regard this gift as a favorable sign of public interest in scientific work. Doubtless there are in this city and in other cities, other people of wealth who would willingly contribute to such enterprises, when it is explained to them that the accelerated medical progress of recent years is due to laboratories and their workers. Not that great discoveries proceed from every institution of this kind—far from it. But it is the sum of labor in all places by all men, that marks the real, substantial ad-

vance, and renders the chance of epoch-making discoveries so much the greater.

Whereas two years ago no hospital in Detroit had a laboratory worthy of the name, there are now well-equipped laboratories for clinical diagnosis at Harper, St. Mary's, and the Woman's Hospital, with men of special training on each, who are in turn training others to a higher level of average skill. But the "Grace Whitney Hoff Recearch Laboratory" is the only one founded by a lay gift, and offering facilities to any one qualified to work.

♣ ♣ ♣

Hygiene, Diet and Long Life is the title of a magazine, the initial number of which has just appeared. It announces that it is to be a popular medical journal, issued monthly, and will have for its object the supplying of a medium through which the medical profession may speak to the laity, "teaching the duty of the public to the physician, as well as the physician to the public." What to eat, how to dress, and how to maintain our dwellings in a hygienic condition—in short, how to prolong life—will be the themes discussed. It will not publish articles on the cure of disease, nor advertisements pertaining to curative substances.

The managing editor is Carl H. von Klein of Chicago, and the editorial staff comprises John A. Wesenger, chief analyst Columbus Medical Laboratory, in charge of the department of "Pure Food"; William L. Baum, professor of infectious diseases in the Chicago Post Graduate, in charge of "Contagious Diseases"; Arthur R. Reynolds, late commissioner of health, Chicago, at the head of the department of "Police Sanitation"; Isaac A. Abt, associate professor of diseases of children at Rush, in charge of "School Hygiene"; Anton Lagorio, director of Chicago Pasteur Institute, Chicago, in charge of "Sanitary Prevention of Rabies."

There is a field for such a journal and we wish it success. Subscription, $1.00 annually, may be sent to 84 Washington street, Chicago.

♣ ♣ ♣

A vote of all the members of the state society will shortly be taken, by mail, on the question of the establishment of a defense league by the society. The matter was brought up at the last annual meeting, in Manistee, and a committee of five was appointed to consider and submit to the Council a plan for starting and maintaining the work. This committee brought its plan before the Council last January and the latter voted to recommend its adoption to the House of Delegates. Many of the county societies have discussed and voted upon the plan, and all but one voted in favor of its adoption.

The Council ordered the secretary to take a postal card vote of the entire membership previous to the Kalamazoo meeting, in order that the sentiment of a large number of our members might be put into the hands of the House of Delegates.

The plan proposed provides for amendments to the state society by-laws in effect as follows:

(1) An initial assessment of $1.50 from each member for the year 1910.

(2) One dollar per year after 1910.

(3) A Standing Committee on Medical Defense, consisting of an Executive Board of five and one member from each county society, not otherwise represented. The Executive Board shall be elected for five years; the other members for one year.

(4) The Executive Board and other members of the Committee are all to be elected by the Council.

(5) The Chairman of the Executive Board, also elected by the Council, for one year, is to be the custodian of the Defense Fund and to give bond to the Council. He is also to receive some compensation set by the Council.

(6) The Executive Board will engage, by the year, a competent firm of attorneys. Their duties

shall be to defend any member not in arrears, when sued or threatened with suit for civil malpractice.

(7) Dues must be paid before June 1st, the league not defending any member in a suit the cause of which arose while in arrears.

(8) It is to be especially noted that the league assumes two years' back liability on every member, provided suit has not been threatened or begun before joining the society or before the league is established. It also assumes the defense of any suit brought against the estate of a deceased member.

(9) Any member threatened with suit may recommend a local attorney who will be appointed by the general attorneys to defend the member. In important cases the general attorneys will be present in court.

(10) All attorneys' fees and court costs will be paid from the Defense Fund and carried through all Michigan courts. The fund will not be liable for any damages declared against an unsuccessful litigant.

(11) In the event that during any one year the demands upon the Defense Fund be great enough to exhaust it, the Council is authorized to loan sufficient funds from the treasury of the state society.

In every state where the defense feature has been undertaken as part of the state society work, it has been an unqualified success and has been a potent factor in increasing the membership. It has been tried out and found financially sound. Think of insurance against malpractice suits for $1.50 per year for the first, and $1.00 per year thereafter!

Every member is urged to return his vote promptly. It will be mailed about August first.

Book Notices

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M. D., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and McGill University, Montreal. Assisted by Thomas McCrea, M. D., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University, Baltimore. In seven octavo volumes of about 900 pages each, illustrated. Volume VI, Diseases of the Urinary System, of the Ductless Glands, of the Muscles, Diseases of Obscure Causation, Vasomotor and Trophic Disorders, Medical Aspects of Life Insurance. Price per volume: cloth, $6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1909.

The sixth volume of Osler's *Modern Medicine*, just off press, covers a very wide and important range of subjects, namely, the diseases of the urinary system, of the ductless glands, of the muscles, those of obscure causation, vasomotor and trophic disorders, and the medical aspects of life insurance. These diseases are all handled by specially competent men. John McCrae, of Toronto, begins the volume with two chapters on the kidney, followed by two on urinary anomalies and uraemia by Garrod, of London. Herrick, of Chicago, deals with all aspects of nephritis, as well as amyloid disease, and Thomas R. Brown, of Baltimore, considers pyogenic and tubercular affections of the kidney. Its medico-surgical aspects, from the pen of H. H. Young, of Baltimore, conclude this section. George Dock, formerly of Ann Arbor, and now of New Orleans, has written the entire section on the ductless glands. Longcope, of Philadelphia, considers Hodgkin's disease; T. McCrae, of Baltimore, arthritis deformans; Dock, of New Orleans, ostemalacia; and D. J. McCarthy, of Philadelphia, astasia-abasia and adiposis dolorosa. Together with W. R. Steiner, of Hartford, McCarthy has written the section on muscular diseases. The editor, Dr. Osler, with his former colleague, C. P. Emerson, of Clifton Springs, handles the section on vasomotor and trophic disorders, and Charles Lyman Greene, of St. Paul, concludes with the medical aspects of life insurance.

We have found especially interesting the chapters by Dock, on Diseases of the Ductless Glands, and that on Hodgkin's Disease by Longcope. They have been well illustrated. Two of the cuts of cretinism are of the cases of Sanderson, published in this journal in April, 1906.

One more volume is to appear, and with it will be completed one of the greatest systems of medicine ever published.

Principles and Practice of Physical Diagnosis. By John C. DaCosta, Jr., M. D., Associate in Clinical Medicine, Jefferson Medical College, Philadelphia. Octavo of 548 pages. 212 illustrations. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, $3.50 net.

As a frontispiece, the author has the following quotation from W. W. Kean: "With all our varied instruments of precision, useful as they are, nothing can replace the watchful eye, the alert ear, the tactful finger, and the logical mind which correlates the facts obtained through all the avenues of information and so reaches an exact diagnosis." To elucidate the methods of physical examination has been the author's aim, no space being given to laboratory methods. The field of the book, therefore, is somewhat more restricted than the ordinary one of medical diagnosis.

Particular attention has been given to clinical anatomy and to the origin, mechanism and meaning of normal physical signs, while throughout, stress is laid on the interpretation of objective data.

The text everywhere gives evidence of careful preparation and the illustrations are good. The book is to be highly recommended.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head, M. D. Vol. III, 1909. The Eye, Ear, Nose, and Throat. 365 pages. Chicago, The Year Book Publishers, 1909.

The third volume of this medical review comprises the field of ophthalmology, edited by Wood; otology, edited by Andrews; and laryngology, edited by Head. The leading articles of the year which have appeared in the world's literature are abstracted, correlated, and commented upon by the editors.

While the series is primarily intended for the family physician, it is an advantage that each volume may be purchased separately.

Thornton's Pocket Medical Formulary. New (9th) edition. Containing about 2,000 prescriptions, with indications for their use. In one leather-bound volume. Price $1.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1909.

The use of aids of this kind is often discouraged on the ground that they replace individual thought. Nevertheless, there is a certain field for them, for, as the author says, "even the best informed physicians may at times overlook an appropriate drug, and a young physician will perform his duty better, both to his patient and to himself, if he has at hand the collective experience of the profession."

The major portion of the book is made up of selected formulae arranged under diseases. In addition are tables of doses, incompatibles, weights and measures, poisons, etc. It is attractively bound in blue leather.

A Text-book of Medical Chemistry and Toxicology. By James W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Second Revised Edition Octtavo of 655 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth $3.00 net.

The number of students beginning the study of medicine who are thoroughly prepared in chemistry is increasing annually; nevertheless, it will be years before all will have a sufficient foundation upon which to take up physiological chemistry and toxicology. There is, therefore, need of a book which gives the essentials of general chemistry in a practical manner with due emphasis on those phases of the subject which relate to medicine. This book, by Holland, who is an experienced teacher, covers this ground in an admirable manner.

The scope of the work may be judged from the main divisions, which are: (1) Introduction, covering chemical philosophy, in which the principles of matter, force, heat, magnetism, electricity, light, etc., are considered; (2) The Chemical Elements, a brief but excellent summary of the metals and the non-metals; (3) Organic and Physiological Chemistry, in which this most difficult branch of chemistry is clearly set forth; (4) Energy of Foods, giving the chemistry of saliva, gastric contents, pancreatic juice, bile, intestinal juice, blood, milk and wine.

Physiological chemistry occupies a more conspicuous place in medical science today than ever before, and the study of books such as this will well repay the practitioner, as well as the student.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Vol. XI. No. 2, June, 1909, Octavo, 317 pages, with 52 illustrations. Per annum, in four paper-bound volumes, containing 1,200 pages, $6.00 net; in cloth, $9.00, net. Lea & Febiger, Publishers, Philadelphia and New York.

The June issue of *Progressive Medicine* deals with abdominal surgery, gynecology, diseases of the blood, and ophthalmology. The section on hernia, edited by Coley, contains an especially good review of the subject of hernia associated

with undescended testicle. Especially noteworthy are Foote's review of the much-discussed Hirschsprung's disease and of surgery of the pancreas, and Clark's review of recent progress in the cancer problem. Stengel summarizes the progress in diseases of the blood and ductless glands. Especially good is the section on diabetes mellitus. Jackson closes with an epitome of the year's developments in ophthalmology.

RECENT LEGISLATION.

The following notes on the Optometric Bill and the Nurses' Registration Bill are furnished the *Journal* by Dr. B. D. Harison, Secretary of the Board of Registration in Medicine.

OPTOMETRIC BILL.

This bill was passed with amendments suggested, through force of circumstances, by the Legislative Committee of the State Medical Society, and has been signed by the Governor. The committee opposed the bill altogether, even with amendments, upon principle, from the fact that optometry, so-called, is the practice of refraction classed under the subject of Diseases of the Eye. It was, however, unable to defeat the bill, but was successful in practically making it unconstitutional.

In this bill the practice of optometry is defined as follows: "Sec. 7. The practice of optometry is hereby defined to be the employment of any means other than the use of drugs for the measurement of the powers of vision and the determination of the accommodative and refractive states of the eye and the scope of its functions in general, and the adaption of lenses and frames for the aid thereof.

"Sec. 8. It shall be unlawful for any person registered under this act to use, prescribe, give away, sell, offer for sale or have in his possession for the purposes of sale, any eye remedies, lotions, salves or medicines of any kind or description, practice medicine or surgery within the provisions of Act No. 237 of the Public Acts of 1899 or Acts amendatory thereto, or use the prefix Dr. or any title or appellation used in a sense to indicate the practice of medicine."

The so-called practice of optometry defined as above, has been one of the subjects in connection with the eye which has been taught and examined upon in all medical schools, of this and other countries, ever since medical schools have been in existence. The medical acts of Michigan provide for an examination on the subject of the eye, and provide for such subject being included in its authorized standards. If refraction (optometry) was not included in the curriculum of recognized medical colleges and a proper course on the subject had in such colleges, including an examination, then graduates of such colleges could not obtain a certificate from this board, as the subject is included in the board's standard, which in law it has authority to set and publish. If refraction is not included in the practice of medicine, then the board would have no authority to demand its teaching and course in recognized medical colleges, nor could it be legally required in its examination for license. The board not only emphasizes the teaching of this subject in medical colleges by special circular, but also, in addition to the written examination, has a practical examination upon the correction of defects of the eye by lenses. If, on the other hand, refraction (optometry) is legally the practice of medicine, then in their act referred to, optometrists, so-called, are disqualified by section 8, as above quoted, from practicing under section 7 of said act.

In addition to refraction (optometry) being taught in medical colleges and practiced by physicians throughout the world from time immemorial, there are several Supreme Court decisions which, without question, show that in law refraction (or optometry) is adjudged as really within the practice of medicine. A few examples of these decisions may be referred to.

Eastman vs. The People, App. Court, Ill., 1896. This decision states that it is not necessary to give drugs or medicines in order to come within the provisions of the legal term "Practice of Medicine."

One of the more recent decisions, and which goes into the matter very thoroughly, is the Supreme Court of New York, Appellate Division, First Department, in the case of People vs. Allcutt. In this decision several other decisions, including Ohio decisions, are referred to and criticised. This New York decision states that the courts of Massachusetts, Maine, Michigan, Iowa, Missouri, Colorado, Nebraska, Illinois, Ohio, Alabama, Indiana, New Mexico, South Dakota and Tennessee refuse to restrict the practice of medicine to the administration of drugs or the use of surgical instruments.

Also, recently the Supreme Court of Massachusetts gave out a like decision, holding that

refraction, or optometry, so-called, came within the legal provisions of the practice of medicine. There are several cases in the Michigan Circuit and Recorder's Courts, i. e., The People vs. Allen Raymond, in the Circuit Court for Calhoun County, in which Judge North instructed the jury as follows: "The practice of medicine, as that term is used in the statute under which this action is brought, means the exercise or performance of any act by or through the use of any thing or matter or by things given or applied, whether with or without the use of drugs or medicine, by a person holding himself or herself out as able to cure diseases or the causes of diseases, with a view to relieve, heal, cure, or having for its object the prevention, healing, curing or alleviation of disease." "Disease" in law including ailments and complaints. In several cases before the Recorder's Court in Detroit, exactly the same language as used by Judge North was used in instructing the jury as to the definition of the practice of medicine.

Based upon the fact that we have an Attorney-General's office in this State, and a Governor who has the power to veto, and whose duty it is to veto unconstitutional bills, and as the facts above were known to both departments of the government, the question naturally suggests itself, "What are these departments maintained for?" By experience, it is a well-known fact that unconstitutional bills are as readily passed upon and signed after they pass the legislature as constitutional ones. It seems that obligation to political supporters is held in higher esteem than personal responsibility to duty. The expense to individual citizens and consequent hardships and confusion also involved, and, in addition, the unnecessary expense to the State created by unconstitutional legislation, seems to deserve some consideration from those executives authorized in law to prevent such preventable conditions.

THE NURSES' BILL.

As passed by the Legislature and signed by Governor Warner, the bill as originally introduced by the authority of the Michigan State Nurses' Association was very materially modified through the efforts of the Legislative Committee of the State Medical Society, of which Regent W. H. Sawyer, of Hillsdale, is chairman. The minimum course in the original bill was cut down to two years, in place of three years, and the Association's definition of a nurse, i. e., "A person who is competent to give efficient care to the sick," was changed to "Within the meaning of this Act, a state registered nurse is defined as one who for hire or reward, nurses, attends and ministers to the sick or afflicted under the supervision and direction of a legally registered practitioner." The original bill created a board composed of five nurses. The bill as passed provides for a membership of five, viz., one registered physician, the Secretary of the State Board of Health and three nurses. Section 12 of the bill has already in similar acts been declared unconstitutional by the Supreme Court. This section was practically copied from the 1883 Medical Act, which was amended constitutionally in 1907. At a public hearing of the Health Committee of the House, at which the State Medical Society, the State Medical Board, the International Association of Hospitals and Training Schools, and several county societies were represented, Dr. F. W. Shumway, Secretary of the State Board of Health, was present and assumed the position of representing the nurses, and was accepted by the medical representatives present and the committee. He suggested as a compromise a board whose membership should include three medical men and two nurses. This proposition was not agreed to by the medical men, who held that a nurse properly should be directly under the authority of the medical profession as represented by the Medical Board and could see no material advantage for creating an additional administration, with the additional expense attached thereto, from the fact that it was provided in the substitute bill filed by the State Legislative Committee, that the Secretary or members of the Medical Board should receive no additional compensation for the administration of the Nurses' Act. The House Committee reported out the bill as finally passed, with a board composed of the Secretary of the State Board of Health, a registered medical man and three graduate nurses. Subsequent to the reporting out of this bill, Dr. Shumway repudiated himself as the representative of the nurses at the meeting of the Committee as above referred to. The following statement signed by the late Representative Sheridan J. Colby just prior to his death at Harper Hospital, and witnessed by Dr. H. O. Walker, needs no comment concerning the

methods used in the passage of this bill in the House:

"This is to certify that I was present in the House during the reading of House Bill No. 180, File No. 174, as reported out by the Committee on Public Health, and which passed the House unanimously on April 7, 1909. In the interests of the people I desired to have some changes made in this bill as reported out by the Committee, and consulted with the Chairman of the Public Health Committee, Dr. Huntley, who had charge of the bill, and was informed by him that there was no opposition to it and that the physicians who had been in opposition had withdrawn such opposition. Several other members of the House also desired to offer amendments to said bill, but were informed by Dr. Huntley, that the bill had been agreed to as reported out by the Committee and passed by the House. On account of this statement of Dr. Huntley's no amendments were offered.

"Harper Hospital, Detroit, Mich.,
"April 29, 1909.
"WITNESS: H. O. Walker.
"SHERIDAN J. COLBY."

The Legislative Committee of the State Society was successful in holding the bill in the Health Committee of the Senate, who unanimously refused to report it out, notwithstanding tremendous political influence was brought to bear upon it, favorable to the bill. Just a few minutes before the adjournment of the Legislature, at a time when bills were being passed by the Senate at the rate of one every twenty-three seconds, and when the slightest opposition to any bill in or out of committee meant the "killing" of important bills, through the repeated efforts of the Governor the nurses' bill was taken from the Committee and passed by the Senate. Absolutely no fair opportunity was afforded, or possible, to those in opposition. As the President of the National Association of Nurses and the editor of the National Nurses' Association Journal have frequently emphasized the legislative axioms in regard to state nurses' bills, viz., a board composed of nurses only, a minimum three years' course, and the definition of a nurse, "one who is competent to give efficient care to the sick" (an M. D. qualification), it is problematical if the nurses' bill as passed meets either the requirement or endorsement of the medical men or of the nurses as a whole. Of course, the "dear people" are responsible for legislative enactments and eventually will be held responsible for the bill.

As nurses are educated, examined and employed by medical men under whose direct authority they are, or should be, the question of the nurses opposing the advice and opinion of the medical men as representated by the state societies of the several schools, could be properly referred to that eminent nautical administrator, William Livingston, President of the Lake Carriers' Association.

The Legislative Committee of the State Medical Society confined its opposition to the proper committees of both houses and absolutely refrained from lobbying in any form whatsoever or using or attempting to use political influence. A "clean sheet" from this standpoint cannot be credited to the nurses, from the facts in evidence.

It should be noted in connection with above statements, that the State Society is not opposed to the principle of state regulation of nurses, it simply contends for a proper act in harmony with the existing medical acts and consistent with the recognized status of nurses, which includes the method of education and training, and the duties and obligations of a reputable graduate nurse.

B. D. HARISON,
Sec'y State Board of
Registration in Medicine.

County Society News

Benzie.

At the last regular meeting of the Benzie County Medical Society, Dr. J. W. Shanks, of Thompsonville, was elected president; Dr. F. A. Van Sickle, of South Frankfort, vice-president; Dr. E. J. C. Ellis, Benzonia-Beulah, secretary and treasurer. Delegate to the Kalamazoo meeting, Dr. H. J. Kinne, of Frankfort; alternate, Dr. G. O. Edmunds, of Honor.

At the next meeting, which will be held in Hotel Windermere, Beulah, the meeting will be followed by a banquet to which the doctors' wives will be invited.

Benzie County Medical Society is in a flourishing condition and the members have derived much benefit from membership in it.

E. J. C. ELLIS, *Sec'y.*

Chippewa.

Dr. C. J. Ennis, Councilor of the Twelfth District, was the honored guest of the Chippewa County Medical Society at a banquet held June 1, 1909, in the Park hotel, Sault Ste. Marie. Dr. Ennis will on August 13 celebrate the twenty-sixth anniversary of his career as a practitioner in his home city, and as this meeting was the last before September the society took advantage of the opportunity to honor the veteran member.

The regular meeting preceded the banquet. An interesting paper was read by Dr. C. J. Dickison, entitled "Use and Abuse of Forceps." The meeting was considered by the members to have been the most enjoyable of any since the institution of the society five years ago. At the conclusion of the meeting the members assembled in a group to have their picture taken. They then adjourned to the dining hall, where Host Marriott had prepared a sumptuous feast.

Dr. G. J. Dickinson presided as toastmaster and in a most pleasing manner he called upon nearly all the members present for remarks. At the conclusion Dr. J. J. Griffin presented, in behalf of the society, a beautiful silver loving cup to Dr. Ennis. He spoke of the high esteem in which Dr. Ennis was held by all in Chippewa County and of the delight and honor he felt in presenting the cup. The recipient responded feelingly. He spoke of his coming to the Soo on August 13, 1883. He recalled the size of the town, its growth, and spoke of the different physicians who have come and gone during his residence there. On the cup piece was inscribed the following:

1883	1908
August 13.	August 13.

"Twenty-five years in practice at the Soo. Presented to Dr. C. J. Ennis by the doctors of the Chippewa County Medical Society."

There were present 17 Soo physicians and three from out of town. The visiting doctors were Cameron, of Pickford; Ferguson, of Rudyard, and Gordon, of Brimley. The Soo doctors present were C. J. Ennis, A. MacDonald, R. Bennie, F. Townsend, W. Townsend, J. Rosenthal, C. W. Willison, E. H. Webster, R. H. Winslow, I. V. Yale, A. McCandless, J. J. Griffin, J. J. Lyons, G. J. Dickison, F. H. Husband, A. E. Lemon and J. Gostanian.

The society accepted an invitation from Dr. Cameron to hold its next meeting, which will occur in September, at the Munoskong Club.

Houghton.

The May meeting of the Houghton County Medical Society was held at the Douglas House, Houghton. A committee of physicians was appointed to take a census of the number of cases of tuberculosis in the county.

Dr. W. K. West, of Painesdale, presented a case of cyanosis, in a man aged 22. The first symptoms appeared at the age of 18. There were no subjective symptoms, the patient being steadily employed as an underground mine worker, and consulted a physician only on account of the anxiety of his friends. Physical examination revealed no demonstrable lesion of the heart or lungs, and a blood count showed 6,250,000 red corpuscles, with haemoglobulin 100 per cent, plus.

A question was raised as to whether it was a case of—

1. Patulous Foramen Ovale, a condition which shows itself, in most cases, before the second week of life.

2. Polycythaemia, or Osler's disease, in which we have an enlarged spleen (absent in this case) and a great increase of red blood corpuscles, sometimes as high as 12,000,000.

Dr. A. B. Mills, of Calumet, read a paper on "Blood Pressure." He spoke of the value of the sphygmomanometer as a diagnostic and prognostic aid in—

1. In Contracted kidney.

2. In typhoid fever, an acute drop indicating a concealed hemorrhage, and a sudden rise being suggestive of a perforation.

3. As a guide in the administration of an anesthetic.

4. Its value as an aid to the early recognition of persistent high tension due to mental strain, so common in modern political and commercial life. A condition resulting on the one hand in apoplexy, and on the other in Bright's disease.

A Faught and a Riva-Rocci sphygmomanometer were exhibited and their use demonstrated.

Dr. W. E. McNamara, of Freda, read a paper on "Direct Transfusion With Especial Ref-

erence to the Crile Method." The various methods of uniting the severed ends of vessels for the purpose of transfusion may be divided into three classes:

First, by invagination, an example of which is Murphy's method, in which the proximal end of a vessel is invaginated into the distal end by means of three U-shaped sutures.

Second, the end-to-end suture, as in Carrel's method, using three traction sutures of fine silk to approximate the edges of the vessels.

Third, by the use of various mechanical protheses. Payr, in 1900, used a small cylinder of magnesium, over which the proximal end of the artery was reflected. Over this the distal end was drawn and tied, thus bringing intima to intima, with no narrowing of the stream and with no foreign body exposed to the blood stream.

(a) This idea has been made use of by Crile and others. Crile had some small metal cannulas made, after the manner of Payr's magnesium prothesis, but with the addition of a small handle by means of which they can be more easily manipulated. With these he perfected a technic by means of which the ordinary practitioner may complete an anastomosis and accomplish a direct transfusion.

(b) Dr. Isaac Levin's transfusion clamp. At the tip of each blade is attached a small cannula with a smooth bore, and having four small pin points at the inner edge of each. An advantage of this clamp is that when a thrombus obstructs the transfusion, the instrument can readily be opened, without destroying the walls of the vessel, the clots removed and the clamp closed again.

Dr. McNamara enumerated some of the conditions in which blood transfusion can be used, described some experiments on dogs which he performed in 1907 and 1908, and gave an account of a typhoid patient on whom he had performed a transfusion by the Crile method. He also exhibited a cut of the Levin clamp, and a set of Crile cannulas.

JOHN McRAE, *Sec'y.*

Manistee.

Health Officer Szudrawski's report for the month of May, to the City Council of Manistee, shows that there were 80 cases of measles, three of scarlet fever, one of diphtheria, four of chickenpox, three of tuberculosis, and two of pneumonia.

Particular attention is called to the role of house flies in the dissemination of infection. The report says that the closets that are not connected with sewers are principally to blame. Later, when flies are more numerous, every such closet will be a positive menace to public health. There is very little typhoid that cannot be blamed on such conditions, and the public should at once awake to the importance of restricting the freedom of flies to enter homes and prevent flies from access to dangerous places.

Oakland.

The regular quarterly meeting of the Oakland County Medical Society was held at Dad's Tavern, in Clarkston, on June 3rd. Dr. J. B. Chapman read a paper on the "Treatment of Rheumatism." Dr. R. Le Barron talked on the subject, "How I Came to Go to the War and Some of the Things Which Came Under my Observation While in the Service." Dr. G. W. Chisholm discussed "Summer Diarrhea in Children."

Supper was served at 6 o'clock at the hotel.

J. T. BIRD, *Sec'y.*

News

The Red Cross Hospital of Detroit has been denied any further city cases from the Poor Commission, because, it is said, of unsatisfactory conditions there, rendering the service unworthy.

A new medical position in Wayne County has been created, to take care of all out-of-town cases chargeable to Detroit. The office is the same as county physician, and Dr. Edward Quandt is appointed to it.

The Detroit city physicians for the ensuing year are F. J. Przybylowski, G. F. Lavin, G. F. Voelkner, William Kanter, P. V. Taylor, and Joshua Hansen.

On June 16th the Grace Whitney Hoff Research Laboratory in the Woman's Hospital and Infants' Home, Detroit, was formally opened, with a reception by the hospital board and laboratory staff to physicians and others interested. Addresses were given by Dr. Reuben Peterson,

Ann Arbor, on "Special Hospitals;" Dr. E. A. Christian, Pontiac, on "Hospital Administration and Accounts;" Dr. G. C. Huber, Ann Arbor, on "Laboratories." The speakers were introduced by Dr. W. P. Manton, chief of the attending medical staff. The work of the new laboratory is under the supervision of Dr. Joseph Sill, as consulting bacteriologist; Dr. W. H. Hutchings, as bacteriologist, and Dr. C. S. Oakman, as pathologist.

On June 9th Tuberculosis Blue Star Day was observed in Detroit, when collections were made for the fund used in the war against tuberculosis by the Detroit society. The preparations and actual work of the day profited by last year's experience and nearly $15,000 was taken in, a substantial increase over the $11,000 of last June. A full report of the disbursements made from the 1908 fund was published in the newspapers.

The Nebraska College of Medicine has closed its doors through the voluntary action of its faculty, because they believed the college was not maintaining and could not maintain a sufficiently high standard of medical education.

Dr. John W. Bosman, Kalamazoo, has been appointed local surgeon for the Grand Trunk Railroad.

Dr. Clyde C. Slemons has been made city bacteriologist of Grand Rapids.

Dr. H. R. Varney, of Detroit, was elected secretary of the Section on Dermatology at the recent meeting of the A. M. A. in Atlantic City.

At the annual meeting of the Blackwell Medical Society, composed of women physicians, the following officers were elected: Jeanne C. Solis, Ann Arbor, president; Mary G. Haskins, Detroit, vice-president; Anna Odell, Detroit, secretary-treasurer; Lucy J. Utter and Grace M. Clarke, Detroit, councilors.

The Detroit College of Medicine alumni elected the following officers at their annual meeting, May 27: Richard E. Mercer, Detroit, president; Ellsworth Mills, Holly, vice-president; F. Buesser, Detroit, secretary; F. W. Robinson, Sturgis, historian.

St. Mary's Hospital, Detroit, has appointed three new internes from the class of 1909, Detroit College of Medicine—G. D. Briggs, T. J. Brennan, S. F. Haverstock.

The following advertisement appeared in the Pittsburg papers on Sunday, June 13, 1909:

PROFESSIONAL FALSIFICATION; $500 REWARD.

Whereas, Dr. Thomas Alexander MacNichol stated in Atlantic City, Tuesday, June 8th, before the Society for the Study of Alcohol and other Narcotics, that 78 per cent of the 30,000 public school children examined in New York city were habitual drinkers of intoxicating liquors, and 71 per cent of the children whose parents were addicted to drink were sufferers from inherited organic or functional diseases, I hereby offer a reward of five hundred ($500) dollars for proof substantiating such statement, the same to be paid after approval by three reputable physicians.

GEORGE MULLER,
416-20 Walnut St., Philadelphia, Pa.

Dr. and Mrs. O. A. Griffin, of Ann Arbor, sailed June 19th from New York for a tour of the European clinics.

On the recommendation of the Medical Board of St. Mary's Hospital, Detroit, the Sisters have established a Department of Obstetrics and are ready to receive a limited number of women in confinement. It is hoped by this means that the nurses of the training school will secure the necessary obstetrical training within the hospital. Certain rooms have been set apart for this purpose. On the recommendation of the Medical Board the Sisters have appointed Dr. C. Hollister Judd and Dr. H. Wellington Yates obstetricians to the hospital.

The following physicians have been licensed in Michigan since March 29th:

Gilbert H. Benton, Cleveland, O.; Cleveland Homeopathic Medical College, 1903. Reciprocity with Ohio.

Alford E. Budde, Norway, Mich.; Northwestern University Medical School, Ill., 1908. Reciprocity with Illinois.

Rosa Englemann, Manistee, Mich.; Northwestern University Woman's Medical College, 1889. Reciprocity with Illinois.

Orange Scott Runnells, Roscommon, Mich.; Cleveland Homeopathic Hospital College, 1871. Reciprocity with Indiana.

Myrtle Belle Hudson, Battle Creek, Mich.; American Medical Missionary College, 1907. Group III.

Bartlett N. Torrey, Detroit, Mich.; St. Louis Medical College, 1874. Reciprocity with Iowa.

Leonardum C. Backus, Ann Arbor, Mich.; Department Medicine and Surgery, University of Michigan, 1887. Reciprocity with Ohio.

Sidney S. Quick, Pittsford, Mich.; Indiana Medical College, Purdue University, 1906. Reciprocity with Indiana.

Oscar B. Lambert, Calumet, Mich.; Northwestern University Medical School, Illinois, 1907. Reciprocity with Illinois.

George Pearn, Jones, Mich.; New York Homeopathic Medical College, 1894. Re-reg. appln. made July 25, 1901; certificate issued June 7, 1909.

George Reinhold Goering, Flint, Mich.; Albany Medical College, New York, 1906. Reciprocity with New York.

Have you collected the fee of fifty cents for each birth registered last year? If not, write to the Secretary of State, Lansing, for blanks. It will be enough to pay all medical society dues and leave a balance.

The following were elected officers of the American Medical Association at Atlantic City: William H. Welch, Baltimore, Md., president; Robert Wilson, Charleston, S. C., first vice-president; Charles J. Kipp, Newark, N. J., second vice-president; Alexander Lambert, New York City, third vice-president; Stanley P. Black, Pasadena, Cal., fourth vice-president; George H. Simmons, Chicago, Ill., general secretary; Frank Billings, Chicago, Ill., treasurer; C. E. Cantrell, Texas (one year, to fill the vacancy caused by death of T. J. Happel); M. L. Harris, Chicago, Ill.; C. A. Daugherty, South Bend, Ind., and William T. Councilman, Boston, Mass., trustees.

Ionia and Montcalm medical societies held a joint picnic at Baldwin Lake, Greenville, Thursday, July 8th.

The "Little Stick," of Detroit, has been carrying out a campaign against advertising quacks. For the week ending June 9th the News published 214 inches of "nasty ads," aggregating $395.90, "which amount represents the News' income from its partnership with unprincipled doctors, in the business of deceiving its ignorant readers. During the same week, the Free Press carried 196 inches of advertising for the same doctor firms, and enjoyed the pleasure of adding about $300 to its iniquity account."

Dr. W. E. Rowe, formerly of Allegan, has located in Grand Rapids.

The regents of the University of Minnesota have abolished the College of Homeopathic Medicine and Surgery on account of the small number—only three—who matriculated the past year.

Marriages

Burton G. McGarry, M. D., of Fenton, to Miss Hazel J. Brown, of Howell, June 3.

Robert Cary Jamieson, M. D., to Miss Carolyn Poppleton, both of Detroit, June 16th.

Robert J. Beebe, M. D., to Miss Ida Schulty, both of West Branch, May 19.

Deaths

Charles M. Thompson, M. D., of Elk Rapids, died at his home, May 10, from aneurism of the aorta, aged 44.

Henry B. Clark, M. D., formerly of Mancelona, died at his home in Jackson, May 16, aged 29.

Dr. J. W. Coughlin died in Bay City, April 20, 1909, of Bright's disease. Dr. Coughlin was born near St. Thomas, Ontario, April 10, 1856. His education was received in the common schools of St. Thomas. After graduating from the high school, he entered St. Michael's College at Toronto. In 1875, he entered Trinity Medical College at Toronto, from which and the medical department of the University of Toronto he graduated in 1879. The same year he came to Bay City.

He was an active member of the Bay County Medical Society, having served as president. He was a member of the Michigan State Society and the American Medical Association. In 1883 he was made health officer of Bay City, which office he held for seven or eight years, remaining on the Board in all ten years. He was a member of the United States Pension Board of Ex-

aminers and its president for four years.

Dr. Caughlin was married in 1880 to Miss Frances Wheelan, of Toronto, Canada, who survives him. Four children were born to them. Of this number three are living—one son, John, and two daughters, Misses Gertrude and Frances.

As a man and physician the doctor would take rank anywhere. Studious, sincere and sympathetic, he enjoyed the full confidence of his colleagues and to an unusual extent that of his patients and friends.

The following resolutions were passed by the Bay County Medical Society:

Death has entered our circle. One has been taken who was learned, true and noble—full of devotion to his profession. Grief fills our hearts at his going, made acute by the irreparable bereavement to his wife and children. For these, no labor was too heavy, no pain too great, to break for a moment his consecration to their interest. Therefore,

Resolved, that in the death of Dr. J. W. Caughlin the Bay County Medical Society loses one of its brightest and best members, one ever loyal and faithful, to whom truth and honorable dealing were ever foremost; that the public, especially his clientele, will long feel their loss and find it difficult to fill his place. For many years to these he was not only physician, but comforter and adviser as well.

To his wife and children, in their great bereavement, we tender our sincere sympathy and commend them to the Father of us all "Who doeth all things well."

Resolved, that these resolutions, with a copy of the Memorial, be spread upon the society's records and copy of each endorsed by the President and Secretary be sent the family.

Bay City, Michigan, April 26, 1909.

(Signed) R. W. ERWIN,
D. F. STONE,
CHAS. H. BAKER,
Committee.

W. R. BALLARD, President.
H. N. BRADLEY, Secretary.

Correspondence.

To the Editor:

In "Human Life," a magazine of which I never heard until I received the April copy, there appears a writeup of father, Charlie and I, which is substantially a reproduction of the article published broadcast about two years ago, and about which we wrote a letter to the medical journals at that time. This particular issue is written so fulsomely as to hold us up to derision and has been sent as a marked copy to a large proportion of the regular medical profession in Wisconsin, Minnesota and Iowa. Not only has this marked copy been sent, but a few days after a follow-up letter came, again calling particular attention to this article under the guise of asking for subscriptions.

So far as we can learn it has been sent only to physicians, and evidently maliciously, with a view of injuring our standing with the medical profession, as every practitioner receiving such a copy would take it as a personal insult. Many physicians with whom we are not acquainted might believe that we knew of it or could have prevented it.

The animus lying behind this attack is evidently the same as is trying to secure a change in the management of the Journal and the Association; evidently the idea is to discredit the Association through attacks upon those who have been influential in its management. I was president of the American Medical Association when some of these reform movements were initiated.

Can you tell me whether there has been the same distribution of the "Human Life" magazine in your State? If you can learn anything which will be useful to us in protecting ourselves please let us know.

Yours very truly,
W. J. MAYO.

Editor of State Journal:

Will you kindly publish the Hippocratic Oath and oblige.

Very truly yours,
R. S.

The following is a translation made by Edgar A. Emens, of Syracuse University:

"I swear by Apollo, the physician, by Æsculapius, by Hygeia, by Panacea, and by all the gods and goddesses, calling them to witness that according to my ability and judgment I will in every particular keep this, my oath and covenant: To regard him who teaches this art equally with my parents, to share my substance, and, if he be in need, to relieve his necessities; to regard his

offspring equally with my brethren; and to teach his art if they shall wish to learn it, without fee or stipulation; to impart a knowledge by precept, by lecture, and by every other mode of instruction to my sons, to the sons of my teacher, and to pupils who are bound by stipulation and oath, according to the law of medicine, but no other.

"I will use that regimen which, according to my ability and judgment, shall be for the welfare of the sick, and I will refrain from that which shall be baneful and injurious. If any shall ask of me a drug to produce death, I will not give it, nor will I suggest such counsel. In like manner I will not give to a woman a destructive pessary.

"With purity and holiness will I watch closely my life, and my art. I will not cut a person who is suffering from a stone, but will give way to those who are practitioners in this work. Into whatever houses I shall enter, I will go to aid the sick, abstaining from every voluntary act of injustice and corruption, and from lasciviousness with women or men—free or slaves.

"Whatever in the life of men I shall see or hear, in my practice or without my practice, which should not be made public, this will I hold in silence, believing that such things should not be spoken."

Michigan Members at Atlantic City.

Ann Arbor—Drs. C. D. Camp, A. W. Hewlett, N. L. Hoff, C. B. G. de Nancrede, Reuben Peterson, Frank Smithies.

Bad Axe—Dr. W. J. Herrington.

Battle Creek—Drs. B. N. Colver, H. M. Dunlap, C. E. Stewart, L. E. Vandervoort.

Blissfield—Drs. R. M. Eccles, G. H. Lamley.

Detroit—Drs. C. L. Aaron, W. S. Anderson, Max Ballin, Robt. Beattie, J. H. Carstens, W. R. Chittick, James Cleland, Jr., Leartus Connor, Ray onnor, J. E. Davis, has. Douglas, Hugo A. Freund, R. W. Gillman, Douglas Gordon, H. J. Hartz, L. J. Hirschman, C. W. Hitchcock, A. D. Holmes, W. H. Hutchings, R. A. Jamieson, E R Larned, P. J. Loranger, T. A. McGraw, G. E. McKean, Angus McLean, J. A. McVeigh, J. A. MacMillan, F. J. W. Maguire, W. P. Manton, W. C. Martin, R. E. Mercer, E. C. Miller, S. G. Miner, G. W. Moran, Delos L. Parker, I. L. Polozker, G. E. Potter, F. W. Robbins, R. S. Rowland, B. R. Schenck, B. R. Shurly, E. R. Shurly, H. R. Varney, F. B. Walker, H. O. Walker, Wadsworth Warren, F. A. Wheeler, H. W. Yates.

Dollar Bay—Dr. E. T. Abrams.

Flint—Drs. C. B. Burr, R. H. Murray, J. W. Orr, H. E. Randall.

Grand Rapids—Drs. A. M. Campbell, S. O. Graves, R. R. Smith.

Ishpeming—Dr. T. A. Felch.

Kalamazoo—Dr. A. W. Crane.

Lake View—Dr. F. R. Blanchard.

Lansing—Drs. G. M. Dunning, Samuel Osborn.

Laurium—Dr. Donald Macqueen.

Milford—Dr. J. C. Black.

Mt. Clemens—Dr. O. C. Fluemer.

Newberry—Dr. F. E. Rutledge.

Owosso—Dr. A. M. Hume.

Painesdale—Dr. W. K. West.

Sturgis—Dr. F. W. Robinson

Tecumseh—Drs. H. P. Conkling, L. G. North.

The Influence of Quinin on Uterine Contraction.—Maurer reviews the literature dealing with the clinical and experimental experiences on the subject. His personal experience embraces 78 cases, of which 63 were during labor and 15 cases to hasten abortion. Quinin was found effective in 61 cases (78,270). It appeared of no consequence what preparation of the drug was used, nor did it matter whether subcutaneous or oral administration was employed. Small doses had no effect. It was found necessary to give 15 grains by mouth, and sometimes to repeat this dosage three times within 12 hours; larger doses are not safe. About one-half hour after administration slight labor pains begin, and in ¾-1 hour the pains become strong and frequent, usually continuing so until after the second stage; if not, more quinin was given. After-effects noted were tinnitus aurium, and, in two cases, headache. The child was not affected. Postpartum febrile reaction was slightly reduced. In the fourteen cases of inevitable abortion the quinin acted well in ten. It is valuable as a remedy because it may make a curettage unnecessary.—*Am. Jour. of Surgery,* from *Deut. med. Woch.*

Dr. William Osler says: "Whether tuberculosis will be finally eradicated is even an open question. It is a foe that is very deeply intrenched in the human race. Very hard it will be to eradicate completely, but when we think of what has been done in one generation, how the mortality in many places has been reduced more than 50%—indeed, in some places 100%—it is a battle of hope, and so long as we are fighting with hope, the victory is in sight."

Progress of Medical Science

SURGERY.

Conducted by

C. S. OAKMAN, M. D.

Traumatic Asphyxia. The term traumatic asphyxia has been applied to the series of phenomena following the suspension of the respiratory function for a more or less prolonged period by forcible compressure of the thorax or abdomen or both. These consist of the usual symptoms of suffocation, associated with a peculiar mottled bluish discoloration of the skin of the face and neck, sometimes extending to the upper part of the thorax, and occasionally to one or both arms, accompanied by subconjunctival hemorrhages and frequently bleeding from ears, nose and pharynx.

Tardieu, in 1870, made very extensive studies upon this subject, drawing information from the observation of the victims of a panic occurring on the Place de la Concorde, in which thirty persons were injured (with 9 deaths), and those of Prof. Hardy, where a number of women were injured by a stampede from a workshop caused by the falling of a part of a wall, as well as quoting the studies of M. Olliver of Anvers, upon those injured in the Champs de Mars, in the year 1837, of whom 23 died. All those injured presented practically the same symptoms, only varying in degree, consisting of unconsciousness, brief or prolonged respiratory and cardiac depression, sometimes with pulmonary engorgement, which was characterized by a cough and moist rales associated with bloody expectoration, and all, without exception, exhibited a reddish violet or even black, discoloration of the face, neck, in some cases extending up to the upper part of the chest, and occasionally to the arms, possessing the appearance of minute ecchymotic spots, at times so numerous as to be almost confluent. Subconjunctival hemorrhages were common to all and a few bled from the mouth, nose or ears. In none was there delirium, convulsion, or paralysis; a few who were thought to be suffering from apoplexy when first seen, disproved this upon regaining consciousness. The post-mortem findings of 9 cases of Tardieu and at least as many of Olliver (Beek states 16) were uniform, and consist briefly of pulmonary congestion and frequently pulmonary apoplexy. Ecchymosis existed under the serous surfaces of lungs and heart and emphysema from rupture of air vessels. Among the characteristics most common was increased fluidity of the blood, which was dark in color, and its accumulation in the chambers of the heart, especially in those of the right side. Tardieu emphasizes the integrity of the brain in the two cases in which he was allowed to open the cranium, and states that Olliver in only a single instance found a considerable bloody exudate on the surface of the cerebral hemispheres. It is of interest to note that Tardieu has known similar symptoms and ecchymotic areas in women following prolonged labor, and in an epileptic, upon whom he made an autopsy.

In this form of suffocating, not only is air prevented from entering the lungs by their inability to expand, but the contents of the thoracic vessels may be forced out, and, in the case of the veins, the current is reversed, overcoming the valves and damning the blood back into the capillaries. If the force acting is sufficiently great, it is conceivable that the capillary vessels should be dilated to a point where paresis would ensue. Beach and Cobb advanced this view, and their microscopic studies seem to be conclusive proof of its correctness. Perth believes the limitation of the discoloration to the face and neck to be due to absence or incompetency of the valves of jugular and facial veins. The fluidity of the blood and its dark color, upon which Tardieu and Olliver lay so much stress, is explained by Draper, who attributes it to the withdrawal of atmospheric oxygen from the blood and thereby lessening its coagulability.

Sub-conjunctival and retinal hemorrhages and hemorrhages from the mucous membrane of the nose and pharynx, may be explained by the lack of support the capillary vessels receive from the surrounding tissue of the corium. This leads to the speculation as to what the condition of the smallest vessels of the brain may be, and whether the slow return of consciousness and the tardy resumption of the mental functions. in some cases, is not directly traceable to a paresis if not rupture of some of the capillary vessels of the cerebrum.

It is, however, well understood that spasms are produced by depriving the respiratory centers of their normal blood supply, as by compression of the great vessels of the neck; or they may be brought about by irritation of these centers, dependent upon an increased carbondioxid content of the blood, thereby lessening the supply of oxygen. The treatment of this condition is directed to the re-establishment of respiratory function, such as artificial respiration, oxygen inhalation, atropine and strychnia, and when the right side of the heart is dilated venesection is indicated.—DUNCAN L. DESPAD, *Annals of Surgery*, June, '09.

PATHOLOGY AND BACTERIOLOGY.

Conducted by

C. E. SIMPSON, M. D.

The Detection of B-oxybutyric Acid in the Urine.—HART describes a method for the detection of B-oxybutyric acid in the urine which is simple and requires no special apparatus. It depends on the following principles: the removal of acetone and diacetic acid by heat, the oxidation of B-oxybutyric acid to acetone by means of hydrogen peroxide, and the detection of acetone in the urine thus treated by Lange's test. His method is as follows:

To 20 c. c. of the suspected urine add 20 c. c. of water and a few drops of acetic acid and boil until the volume is reduced to about 10 c. c. To this residue add water to the original volume, 20 c. c. Put this into two test tubes (B and C) of equal size, 10 c. c. in each test tube. To one of the tubes (C) add one c. c. of peroxide of hydrogen, warm gently for about one minute, do not boil, and then allow the fluid to cool. Add to each test tube one-half of 1 c. c. of glacial acetic acid and a few drops of a freshly prepared watery solution of sodium nitroprussiate and mix. Overlay the solution in each test tube with 2 c. c. of concentrated ammonium hydroxide. Allow these to stand for four or five hours, and at the end of this time compare the two test tubes. At the point of contact between the ammonia and the underlying fluid B will show no ring (or a faint brown ring if much creatinine is present): C, to which hydrogen peroxide was added, will show a purplish red contact ring if B-oxybutyric acid was originally present; if B-oxybutyric acid was not originally present the two test tubes will not differ in appearance. If the two test tubes are now shaken the difference in color will be seen throughout the fluid; this difference being intesified by allowing the tubes to stand for fifteen or twenty minutes after shaking.

The test may be applied to the urine either before or after fermentation; the presence of sugar does not interfere with the reaction. If albumin is present it should be removed by filtration after the urine has been boiled. The method is moderately delicate and will certainly detect B-oxybutyric acid when present to the extent of .3% and probably less.—*American Journal of Medical Sciences*, 137, p. 869.

The Effect of Fever in Infectious Disease.—The MEDICAL RECORD discusses editorially the effect of fever in infectious diseases, remarking the difference of opinion on the subject that exists in the profession. Thus some consider high temperature always harmful, others regard it as a reparative reaction only, and a third-class think it may work both injury and benefit in the same organism. Dr. Rolly's article in the *Münchener Medizinische Wochenschrift* is quoted. Experiments were made with animals kept in over-heated cages for many days. The animals failed to show any changes in the parenchyma of organs that could be compared to the degenerations produced by infectious disease accompanied by fever. High temperature seems to play but a subordinate role in the increase of proteid metabolism that is observed in infectious diseases.

Many investigations have proved that the changes in pulse and respiration in infectious diseases are due to the toxins produced and not to high temperature. Circulating toxins produce vasomotor paralysis with subsequent lowering of blood pressure. Rolly's experiments lead to the conclusion that neither the hemoglobin nor the cellular constituents of the blood are affected by prolonged artificial hyperthermia. So far as reaction to disease is concerned the experiments tended to show that high temperature is favorable to the progress of the disease, for in animals it increased phagocytosis as well as the amount of agglutinins and other protective substances in the blood.

Rolly's final conclusion is that rise in temperature accompanying infectious disease is productive of more benefit than injury to the organism. It simply marks a very intense reaction to injury aimed at the destruction of the infecting agents or the neutralization of their toxins. Clinically, therefore, his views oppose any extreme antipyretic measures, whether medicinal or hydrotherapeutic. He would try to control only very high temperatures or such as are accompanied by marked nervous disturbance.

NEUROLOGY.

Conducted by

C. W. HITCHCOCK, M. D.

Amyotonia Congenita.—This disease is so rare that but one case, by Spiller in 1905, has been reported in this country and, all told, but twenty-seven cases have been recorded. Oppenheim in the paper first describing its clinical findings (which appeared in 1900) thus describes it: "A condition of extreme flaccidity of the muscles associated with an entire loss of deep reflexes, most marked at the time of birth but always showing a tendency to slow and progressive amelioration. There is great weakness but no absolute paralysis of any muscle. The limbs are most affected, the face is almost always exempt. The muscles are small and soft but there is no local muscular wasting. Contractures are prone to occur in the course of time. The faradic excitability in the muscles is lowered and strong faradic stimuli are borne without complaint. No other symptoms indicative of lesion of the nervous system occur."

The case here reported corresponds essentially to the above description, though differing in some respects. We are still in ignorance as to the cause of the disease. But heredity, present in this case, has not been a possible factor in other cases. Infectious disease has been absent in the majority of cases. Injury and evident maternal disease can be eliminated as factors. The author conceives that the conditions here present could be explained by the "prenatal action of the unknown toxin" upon the trophic elements of the nerves themselves causing atony and atrophy of the muscles."

The birth has usually been normal, though many of the children were small and thin. The flaccid condition of joints and muscles was early noted. In some cases, inability to hold the head up was the first noticeable symptom. The abnormal flaccidity of joints has made strange contortions possible. In all cases there were noted diminished response to strong faradic currents and unusual toleration of them. In most of the cases there was loss of the deep reflexes.

The myopathies and amaurotic family idiocy are to be differentiated from amotonia, though in other cases mentality has been good. This case, the child of an alcoholic and syphilitic father, was born "as though dead." Family type of amyotonia is also to be excluded. Spiller's findings present arrested development of muscle fibers, a hyaloid appearance of muscles, some involvement of lymphatics and liver.

This case was four years old, had never sat up alone nor talked nor fed herself. Child is small, skin soft and clear, palate high-arched, head rather large for body. The muscles are soft, lax, flaccid and show much lack of tone. She cannot lift her head nor hold it up. She can take and enjoy currents ordinarily painful, the pain sense is not lacking.

Knee-jerks are present in certain conditions. Hemoglobin was but 45 per cent, erythrocytes 2,600,000; leucocytes 9,000—a secondary anemia of infantile type. —ORBISON in *Journal of Nervous and Mental Diseases* for April, 1909.

Motor Ataxia from Emotion.—S. WEIR MITCHELL cites an interesting and unusual case of a builder, aet. 45, who, though always healthy and strong, had been inclined to be nervous. He had allowed himself little recreation but otherwise his habits were good. His memory had been phenomenal and he showed no mental defect.

About 12 years before, his trouble, of which he had long been conscious, became apparent to others. Careful examination failed to bring out any neurological stigma, but at times he would find himself utterly unable to write plainly in the presence of others who were looking at him. If making his signature, the first letters of his name would be plain and then would follow an abrupt irregularity, the hand flying off across the page. This rarely occurs to him when alone or in the midst of other people who are paying no attention to him, but if he thinks his act is being watched, the ataxia quickly develops.

Prolonged physical effort (carrying a valise) induces a fatigue likely to produce the ataxy but a glass or two of whiskey quickly steadies him. At times he feels he can write or do other fine work steadily but at other times for a half-hour at a time he feels himself utterly incapable of any fine act,—lifting a cup, writing, or drawing, etc.

Self-consciousness intensified is a stigma of many cases of so-called nervousness—and since relating this case, knowledge has come to the author of a number of individuals who are subjects of a like infirmity. He presumes that "with the sense of failing powers comes watchful self-consciousness, so that what is an almost automatic action becomes distinctly impaired by being a product of too attentive volition."—*Journ. of Nerv. and Ment. Dis.*, May, '09.

ORTHOPEDIC SURGERY.

Conducted by

WILLIAM E. BLODGETT, M. D.

Suggestions for the Treatment of Lateral Curvature by Braces.—Lateral curvature is the subject of orthopedic surgery which has been most thoroughly studied and yet is unsolved. Twenty years ago, the treatment consisted in the use of braces, often very complicated and seldom effective, in unreasoned gymnastics, and in the application of plaster-of-Paris jackets put on with the patient in suspension. Reminders of these now superseded practices are still present in the back rooms of our offices, in the medical supply stores, and in the practice of the professional gymnast.

In the last twenty years there has been an unprecedented amount of research on the subject. Lorenz, Albert, Shulthess, Lange, Klapp, Böhm, Wullstein, Lovett and Feiss have been the leaders in this work. Up to the present time the most notable results of this work have been Wullstein's demonstration that structural scoliosis could be experimentally produced in young dogs that were bandaged in a distorted position for a few months; forcible correction, or apparent correction, by plaster jackets, first put on by Wullstein with head traction, running up to two hundred and fifty pounds, and side pressure, recently perfected by Lovett by use of powerful lateral and rotation pressure, in his special horizontal frame, without head traction; and Böhm's recent discovery that many of the cases of structural scoliosis carefully radiographed by him showed congenital anomalies of the vertebrae—so-called numerical variations. Feiss has worked out a logical theory of the mechanics of lateral curvature, thus explaining the proximate causation of lateral curvature, although not considering the remote causes, such as Böhm's theory of numerical variations, and regarding these remote causes important only as rendering the proximate causes active. This work has been reported during the last three years in a series of five papers, and has commanded the respect of all orthopedic surgeons. Since Feiss's mechanical explanation applies to all cases, whatever the remote cause or causes, a plan of treatment based on them would likewise apply to all cases. Such a plan of treatment is the subject of Feiss's paper here to be abstracted.

Feiss's studies of the mechanics of lateral curvature may be summed up as follows:

The important point is that the deforming tendencies are revealed in postures of asymmetry, namely, in lateral bend or twist or in the combined states. Following these attitudes there took place according to our conclusions a great strain in the peripheral skeleton with the reactionary strain (which may or may not be considered primary) in the central skeleton or column. The chief effect noted was that with the diversion of the trunk and the accompanying strain in the peripheral parts, the ribs had to give if the limits of the elasticity was overstepped. This strain not only deformed the ribs, but caused retrogression of the vertebrae to which they were attached. The thorax having become deformed after this fashion, there had to be a new balancing of parts around the line of support on account of the difference in weight on the two sides of the thorax; consequently, the vertebrae would be drawn out of their normal line and rendered into a lateral curve, although even before this took place the central primary strain in the column in the deformation attitude might in itself make a permanent curve in that column. These were the chief practical points in the theory. One significant point about these postural strains was that although the formula of change for lateral bend and for twist was somewhat different, the effect was nevertheless the same; and this from the point of view of treatment is of considerable importance, as will be seen.

Feiss's plan for treatment is to maintain by a brace the reverse of the pure deformation of the spine, that is the reverse of the position of the spine in which it most resembles the normal spine in corresponding position. This position of pure deformation is the position which the patient would assume if he had not unconsciously adjusted himself to the deforming posture by secondary deformities to relieve and conceal the primary deformity. Thus the ordinary right dorsal convex curve would bring irresistible strain on the body when in upright equilibrium unless compensated by left lumbar convex curve. The position of pure deformation therefore in this ordinary case would be a long simple right convex curve, similar to left lateral bending in the normal. The position artificially to be maintained for treatment would be a long simple left convex curve. The brace used by Feiss to accomplish this is simple, light, and free from many of the objections to a jacket.

It is noteworthy that this principle of treatment aims to be curative, and not simply corrective. Indeed the position produced by the brace is no immediate improvement, but by reversing the mechanical stress, tends to fundamental, self sustained straightening, both of the rotary as well as the lateral deformity. This principle of treatment therefore marks an advance toward the specific and away from the symptomatic.—*American Jour. Orthopedic Surg.*, Feb., '09, VI, 3, p. 391.